THE STATE OF TEXAS §

COUNTY OF TRAVIS §

CONTRACT FOR ENGINEERING SERVICES
Cost Plus Fixed Fee,
Unit Cost, Lump Sum, or Specified Rate
Indefinite Deliverable with Work Authorizations

THIS CONTRACT FOR ENGINEERING SERVICES is made by and between the State of Texas acting by and through the Texas Department of Transportation, 125 E. 11th St., Austin, Texas 78701, hereinafter called "State," and Huitt-Zollars, Inc. having its principal business address at 1717 McKinney Ave., Suite 1400, Dallas, TX 75202, hereinafter called "Engineer," for the purpose of contracting for engineering services.

WITNESSETH

WHEREAS, Government Code, Chapter 2254, Subchapter A, "Professional Services Procurement Act," provides for the procurement of engineering services; and

WHEREAS, 43 Texas Administrative Code §9.30 et seq. establishes the Texas Department of Transportation's policies and procedures for contracting for engineering services; and,

WHEREAS, the State desires to contract for engineering services generally described as preparation of plans, specifications and estimates (PS&E) and related documents, for various On-System and Off-System Bridge replacements. These services may include preparing roadway and bridge design, hydrologic and hydraulic design, traffic signal design, survey, geotechnical data collection, and construction phase services necessary to support the design process; and,

WHEREAS, the State has selected the Engineer to provide the needed services and the Engineer has agreed to provide the services subject to the terms and conditions hereinafter set forth.

NOW, THEREFORE, the State and the Engineer, in consideration of the mutual covenants and agreements herein contained, do hereby mutually agree as follows.

AGREEMENT

ARTICLE 1. SCOPE OF SERVICES. The State and the Engineer will furnish items and perform those services for fulfillment of the contract as identified in Attachment B, Services to be Provided by the State and Attachment C, Services to be Provided by the Engineer. All services provided by the Engineer will conform to standard engineering practices and applicable rules and regulations of the Texas Engineering Practices Act and the rules of the Texas Board of Professional Engineers.

ARTICLE 2. CONTRACT PERIOD. This contract becomes effective when fully executed by all parties hereto and it shall terminate at the close of business on October 1, 2019 unless the contract period is: (1) modified by written supplemental agreement prior to the date of termination as set forth in Attachment A, General Provisions, Article 6, Supplemental Agreements; (2) extended due to a work suspension as provided for in Attachment A, Article 3, Paragraph C; or (3) otherwise terminated in accordance with Attachment A, General Provisions, Article 15, Termination. Any work performed or cost incurred before or after the contract period shall be ineligible for reimbursement.

The maximum contract time is the time needed to complete all work authorizations that will be issued in the first two years of the contract. All work authorizations must be issued within the initial two-year period, starting from the contract execution date.

ARTICLE 3. COMPENSATION.
A. Maximum Amount Payable. The maximum amount payable under this contract without modification is shown in Attachment E, Fee Schedule. Payment under this contract beyond the end of the current fiscal biennium is subject to availability of appropriated funds. If funds are not appropriated, this contract shall be terminated immediately with no liability to either party.

B. Basis of Payment. The basis of payment is identified in Attachment E, Fee Schedule. Reimbursement of costs incurred under a work authorization shall be in accordance with Attachment E, Fee Schedule.

C. Reimbursement of Eligible Costs. To be eligible for reimbursement, the Engineer's costs must (1) be incurred in accordance with the terms of a valid work authorization; (2) be in accordance with Attachment E, Fee Schedule; and (3) comply with cost principles set forth at 48 CFR Part 31, Federal Acquisition Regulation (FAR 31). Satisfactory progress of work shall be maintained as a condition of payment.

D. Engineer Payment of Subproviders. No later than ten (10) days after receiving payment from the State, the Engineer shall pay all subproviders for work performed under a subcontract authorized hereunder. The State may withhold all payments that have or may become due if the Engineer fails to comply with the ten-day payment requirement. The State may also suspend the work under this contract or any work authorization until subproviders are paid. This requirement also applies to all lower tier subproviders, and this provision must be incorporated into all subcontracts.

ARTICLE 4. PAYMENT REQUIREMENTS

A. Monthly Billing Statements. The Engineer shall request reimbursement of costs incurred by submitting the original and one copy of an itemized billing statement in a form acceptable to the State. The Engineer is authorized to submit requests for reimbursement no more frequently than monthly and no later than ninety (90) days after costs are incurred.

B. Billing Statement. The billing statement shall show the work authorization number for each work authorization included in the billing, the total amount earned to the date of submission, and the amount due and payable as of the date of the current billing statement for each work authorization. The billing statement shall indicate if the work has been completed or if the billing is for partial completion of the work. The fixed fee will be paid in proportion to the percentage of work completed per work authorizations.

C. Overhead Rates. The Engineer shall use the provisional overhead rate indicated in Attachment E. If a periodic escalation of the provisional overhead rate is specified in Attachment E, the effective date of the revised provisional overhead rate must be included. For lump sum contracts, the overhead rate remains unchanged for the entire contract period.

D. Thirty Day Payments. Upon receipt of a billing statement that complies with all invoice requirements set forth in this Article, the State shall make a good faith effort to pay the amount which is due and payable within thirty (30) days.

E. Withholding Payments. The State reserves the right to withhold payment of the Engineer's billing statement in the event of any of the following: (1) If a dispute over the work or costs thereof is not resolved within a thirty day period; (2) pending verification of satisfactory work performed; (3) the Engineer becomes a delinquent obligor as set forth in Section 231.006 of the Family Code; (4) required reports are not received; or (5) the State Comptroller of Public Accounts will not issue a warrant to the Engineer. In the event that payment is withheld, the State shall notify the Engineer and give a remedy that would allow the State to release the payment.

F. Required Reports.

(1) As required in Attachment H, Disadvantaged Business Enterprise or Historically Underutilized Business Program Requirements, the Engineer shall submit Progress Assessment Reports to report actual payments made to Disadvantaged Business Enterprises or Historically Underutilized Businesses. One copy shall be submitted with each billing statement and one copy shall be submitted to the address included in Attachment H, Disadvantaged Business Enterprise or Historically Underutilized Business Program Requirements.

(2) Prior to contract closeout, the Engineer shall submit a Final Report (Exhibit H-4) to the address set forth in Attachment H.

(3) The Engineer shall submit a separate report with each billing statement showing the percent completion of the work accomplished during the billing period and the percent completion to date, and any additional written report requested by the State to document the progress of the work.

G. Subproviders and Suppliers List. Pursuant to requirements of 43 Texas Administrative Code §9.50 et seq., the Engineer must provide the State a list (Exhibit H-5/DBE or Exhibit H-6/HUB) of all Subproviders and suppliers

that submitted quotes or proposals for subcontracts. This list shall include subproviders and suppliers names, addresses, telephone numbers, and type of work desired.

H. Debt to the State. If the State Comptroller of Public Accounts is prohibited from issuing a warrant or initiating an electronic funds transfer to the Engineer because of a debt owed to the State, the State shall apply all payment due the Engineer to the debt or delinquent tax until the debt or delinquent tax is paid in full.

I. Audit. The state auditor may conduct an audit or investigation of any entity receiving funds from the state directly under the contract or indirectly through a subcontract under the contract. Acceptance of funds directly under the contract or indirectly through a subcontract under this contract acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. An entity that is the subject of an audit or investigation must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

ARTICLE 5. WORK AUTHORIZATIONS. The State will issue work authorizations using the form included in Attachment D (Work Authorizations and Supplemental Work Authorizations) to authorize all work under this contract. The Engineer must sign and return a work authorization within seven (7) working days after receipt. Refusal to accept a work authorization may be grounds for termination of the contract. The State shall not be responsible for actions by the Engineer or any costs incurred by the Engineer relating to work not directly associated with or prior to the execution of a work authorization. Terms and conditions governing the use of work authorizations are set forth in Attachment A, General Provisions, Article 1.

ARTICLE 6. SIGNATORY WARRANTY. The undersigned signatory for the Engineer hereby represents and warrants that he or she is an officer of the organization for which he or she has executed this contract and that he or she has full and complete authority to enter into this contract on behalf of the firm. These representations and warranties are made for the purpose of inducing the State to enter into this contract.

ARTICLE 7. All notices to either party by the other required under this agreement shall be delivered personally or sent by certified or U.S. mail, postage prepaid, addressed to such party at the following addresses:

Engineer:	**State:**
Huitt-Zollars, Inc. 1717 McKinney Ave., Suite 1400 Dallas, TX 75202	Director, Professional Engineering Procurement Services Texas Department of Transportation 125 E. 11th Street Austin, Texas 78701

All notices shall be deemed given on the date so delivered or so deposited in the mail, unless otherwise provided herein. Either party may change the above address by sending written notice of the change to the other party. Either party may request in writing that such notices shall be delivered personally or by certified U.S. mail and such request shall be honored and carried out by the other party.

ARTICLE 8. INCORPORATION OF PROVISIONS. Attachments A through H are attached hereto and incorporated into this contract as if fully set forth herein.

IN WITNESS WHEREOF, the **State** and the **Engineer** have executed this contract in duplicate.

THE ENGINEER

(Signature)

Mr. William E. Kallas, P. E.
(Printed Name)

Vice President
(Title)

9-24-15
(Date)

THE STATE OF TEXAS

(Signature)

William L. Hale, P.E.
Chief Engineer
(Title)

10/2/15
(Date)

Attachments to Contract for Engineering Services Incorporated into the Contract by Reference

Attachments	Title
A	General Provisions
B	Services to Be Provided by the State
C	Services to Be Provided by the Engineer
D	Work Authorization and Supplemental Work Authorization
E	Fee Schedule
F	Not Applicable
G (N/A)	Computer Graphics Files for Document and Information Exchange, if applicable
H-FG	Disadvantaged Business Enterprise (DBE) for Federal Funded Professional or Technical Services Contracts – See Attachment H Instructions
H – FN	Disadvantaged Business Enterprise (DBE) for Race-Neutral Professional or Technical Services Contracts – See Attachment H Instructions
H – SG (N/A)	Historically Underutilized Business (HUB) Requirements for State Funded Professional or Technical Services Contracts – State of Texas HUB. Subcontracting plan required – See Attachment H Instructions
H – SN (N/A)	Historically Underutilized Business (HUB) Requirements for State Funded Professional or Technical Services Contracts – No State of Texas HUB
Exhibits	**Title**
H – 1	Subprovider Monitoring System Commitment Worksheet
H – 2	Subprovider Monitoring System Commitment Agreement
H – 3	Monthly Progress Assessment Report
H - 4	Subprovider Monitoring System Final Report
H - 5	Federal Subproviders and Supplier Information
H – 6 (N/A)	HUB Subcontracting Plan (HSP) Prime Contractor Progress Assessment Report

ATTACHMENT A

GENERAL PROVISIONS

INDEX TO PROVISIONS

ATTACHMENT A

GENERAL PROVISIONS

ARTICLE 1. WORK AUTHORIZATIONS

A. Use. The Engineer shall not begin any work until the State and the Engineer have signed a work authorization. Costs incurred by the Engineer before a work authorization is fully executed or after the completion date specified in the work authorization are not eligible for reimbursement. All work must be completed on or before the completion date specified in the work authorization, and no work authorization completion date shall extend beyond the contract period set forth in Article 2 of the contract (Contract Period).

The maximum contract time is the time needed to complete all work authorizations that will be issued in the first two years of the contract. All work authorizations must be issued within the initial two-year period, starting from the contract execution date.

B. Contents. Each work authorization will specify (1) the types of services to be performed; (2) a period of performance with a beginning and ending date; (3) a full description of the work to be performed; (4) a work schedule with milestones; (5) a cost not to exceed amount, (6) the basis of payment whether cost plus fixed fee, unit cost, lump sum, or specified rate; and (7) a work authorization budget calculated using fees set forth in Attachment E, Fee Schedule. The Engineer is not to include additional contract terms and conditions in the work authorization. In the event of any conflicting terms and conditions between the work authorization and the contract, the terms and conditions of the contract shall prevail and govern the work and costs incurred.

C. Work Authorization Budget. A work authorization budget shall set forth in detail (1) the computation of the estimated cost of the work as described in the work authorization, (2) the estimated time (hours/days) required to complete the work at the hourly rates established in Attachment E, Fee Schedule; (3) a work plan that includes a list of the work to be performed, (4) a stated maximum number of calendar days to complete the work, and (5) a cost-not-to-exceed-amount or unit or lump sum cost and the total cost or price of the work authorization. The State will not pay items of cost that are not included in or rates that exceed those approved in Attachment E.

D. No Guaranteed Work. Work authorizations are issued at the discretion of the State. While it is the State's intent to issue work authorizations hereunder, the Engineer shall have no cause of action conditioned upon the lack or number of work authorizations issued.

E. Incorporation into Contract. Each work authorization shall be signed by both parties and become a part of the contract. No work authorization will waive the State's or the Engineer's responsibilities and obligations established in this contract. The Engineer shall promptly notify the State of any event that will affect completion of the work authorization.

F. Supplemental Work Authorizations. Before additional work may be performed or additional costs incurred, a change in a work authorization shall be enacted by a written supplemental work authorization in the form identified and attached hereto as Attachment D. Both parties must execute a supplemental work authorization within the period of performance specified in the work authorization. The State shall not be responsible for actions by the Engineer or any costs incurred by the Engineer relating to additional work not directly associated with the performance or prior to the execution of the work authorization. The Engineer shall allow adequate time for review and approval of the supplemental work authorization by the State prior to expiration of the work authorization. Any supplemental work authorization must be executed by both parties within the time period established in Article 2 of the contract, (Contract Period). Under no circumstances will a work authorization be allowed to extend beyond the contract's expiration date or will the total amount of funds exceed the maximum amount payable set forth in Article 3A of the contract (Compensation).

F-1. More Time Needed. If the Engineer determines or reasonably anticipates that the work authorized in a work authorization cannot be completed before the specified completion date, the Engineer shall promptly notify the State. The State may, at its sole discretion, extend the work authorization period by execution of supplemental authorization, using the form attached hereto as Attachment D.

F-2. Changes in Scope. Changes that would modify the scope of the work authorized in a work authorization must be enacted by a written supplemental work authorization. The Engineer must allow

adequate time for the State to review and approve any request for a time extension prior to expiration of the work authorization. If the change in scope affects the amount payable under the work authorization, the Engineer shall prepare a revised work authorization budget for the State's approval.

G. New Work Authorization. If the Engineer does not complete the services authorized in a work authorization before the specified completion date and has not requested a supplemental work authorization, the work authorization shall terminate on the completion date. At the sole discretion of the State, it may issue a new work authorization to the Engineer for the incomplete work using the unexpended balance of the preceding work authorization for the project. If approved by the State, the Engineer may calculate any additional cost for the incomplete work using the rates set forth in the preceding work authorization and in accordance with Attachment E, Fee Schedule.

H. Emergency Work Authorizations. The State, at its sole discretion, may accept the Engineer's signature on a faxed copy of the work authorization as satisfying the requirements for executing the work authorization, provided that the signed original is received by the State within five business days from the date on the faxed copy.

I. Proposal Work Authorizations. The State may issue a proposal work authorization under which the Engineer will submit a proposal for additional work. The proposal must be for additional work that is within the defined scope of work under this contract. The amount to be paid for a proposal work authorization will be a lump sum for each proposal. The lump sum payment will be no less than two percent (2%) and no more than four percent (4%) of the State's estimate of the cost of the additional work. The Engineer may elect without penalty not to submit a proposal in response to a proposal work authorization. Any proposal submitted in response to a proposal work authorization will be the sole property of the State. The State may, at its option, issue similar or identical proposal work authorizations under other contracts, and the proposals submitted in response to the various proposal work authorizations may be compared by the State for the purpose of determining the contract under which the work will be awarded. The determination of the contract under which the work will be awarded will be based on the design characteristics of the proposal and the Engineer's qualifications and will not consider the Engineer's rates.

J. Deliverables. Upon satisfactory completion of the work authorization, the Engineer shall submit the deliverables as specified in the executed work authorization to the State for review and acceptance.

ARTICLE 2. PROGRESS

A. Progress meetings. The Engineer shall from time to time during the progress of the work confer with the State. The Engineer shall prepare and present such information as may be pertinent and necessary or as may be requested by the State in order to evaluate features of the work.

B. Conferences. At the request of the State or the Engineer, conferences shall be provided at the Engineer's office, the office of the State, or at other locations designated by the State. These conferences shall also include evaluation of the Engineer's services and work when requested by the State.

C. Inspections. If federal funds are used to reimburse costs incurred under this contract, the work and all reimbursements will be subject to periodic review by the U. S. Department of Transportation.

D. Reports. The Engineer shall promptly advise the State in writing of events that have a significant impact upon the progress of a work authorization, including:

1. problems, delays, adverse conditions that will materially affect the ability to meet the time schedules and goals, or preclude the attainment of project work units by established time periods; this disclosure will be accompanied by statement of the action taken or contemplated, and any State or federal assistance needed to resolve the situation; and
2. favorable developments or events which enable meeting the work schedule goals sooner than anticipated.

E. Corrective Action. Should the State determine that the progress of work does not satisfy the milestone schedule set forth in a work authorization, the State shall review the work schedule with the Engineer to determine the nature of corrective action needed.

ARTICLE 3. SUSPENSION OF WORK AUTHORIZATION

A. Notice. Should the State desire to suspend a work authorization but not terminate the contract, the State may verbally notify the Engineer followed by written confirmation, giving (30) thirty days notice. Both parties may waive the thirty-day notice in writing.

B. Reinstatement. A work authorization may be reinstated and resumed in full force and effect within sixty (60) business days of receipt of written notice from the State to resume the work. Both parties may waive the sixty-day notice in writing.

C. Contract Period Not Affected. If the State suspends a work authorization, the contract period as determined in Article 2 of the contract (Contract Period) is not affected and the contract and the work authorization will terminate on the date specified unless the contract or work authorization is amended to authorize additional time.

D. Limitation of Liability. The State shall have no liability for work performed or costs incurred prior to the date authorized by the State to begin work, during periods when work is suspended, or after the completion date of the contract or work authorization.

ARTICLE 4. ADDITIONAL WORK

A. Notice. If the Engineer is of the opinion that any assigned work is beyond the scope of this contract and constitutes additional work, it shall promptly notify the State in writing, presenting the facts of the work authorization and showing how the work authorization constitutes additional work.

B. Supplemental Agreement. If the State finds that the work does constitute additional work, the State shall so advise the Engineer and a written supplemental agreement will be executed as provided in General Provisions, Article 6, Supplemental Agreements.

C. Limitation of Liability. The State shall not be responsible for actions by the Engineer or any costs incurred by the Engineer relating to additional work not directly associated with or prior to the execution of a supplemental agreement.

ARTICLE 5. CHANGES IN WORK

A. Work Previously Submitted as Satisfactory. If the Engineer has submitted work in accordance with the terms of this contract but the State requests changes to the completed work or parts thereof which involve changes to the original scope of services or character of work under the contract, the Engineer shall make such revisions as requested and as directed by the State. This will be considered as additional work and paid for as specified under Article 4, Additional Work.

B. Work Does Not Comply with Contract. If the Engineer submits work that does not comply with the terms of this contract, the State shall instruct the Engineer to make such revision as is necessary to bring the work into compliance with the contract. No additional compensation shall be paid for this work.

C. Errors/Omissions. The Engineer shall make revisions to the work authorized in this contract which are necessary to correct errors or omissions appearing therein, when required to do so by the State. No additional compensation shall be paid for this work.

ARTICLE 6. SUPPLEMENTAL AGREEMENTS

A. Need. The terms of this contract may be modified if the State determines that there has been a significant increase or decrease in the duration, scope, cost, complexity or character of the services to be performed. A supplemental agreement will be executed to authorize such significant increases or decreases. Significant is defined to mean a cost increase of any amount and a cost decrease of twenty percent (20%) or more of the original estimated project cost.

B. Compensation. Additional compensation, if appropriate, shall be calculated as set forth in Article 3 of the contract (Compensation). Significant changes affecting the cost or maximum amount payable shall be defined to include but not be limited to new work not previously authorized or previously authorized services that will not be performed. The parties may reevaluate and renegotiate costs at this time.

C. When to Execute. Both parties must execute a supplemental agreement within the contract period specified in Article 2 of the contract (Contract Period).

ARTICLE 7. OWNERSHIP OF DATA

A. Work for Hire. All services provided under this contract are considered work for hire and as such all data, basic sketches, charts, calculations, plans, specifications, and other documents created or collected under the terms of this contract are the property of the State.

B. Disposition of Documents. All documents prepared by the Engineer and all documents furnished to the Engineer by the State shall be delivered to the State upon request by the State. The Engineer, at its own expense, may retain copies of such documents or any other data which it has furnished the State under this contract, but further use of the data is subject to permission by the State.

C. Release of Design Plan. The Engineer (1) will not release any roadway design plan created or collected under this contract except to its subproviders as necessary to complete the contract; (2) shall include a provision in all subcontracts which acknowledges the State's ownership of the design plan and prohibits its use for any use other than the project identified in this contract; and (3) is responsible for any improper use of the design plan by its employees, officers, or subproviders, including costs, damages, or other liability resulting from improper use. Neither the Engineer nor any subprovider may charge a fee for the portion of the design plan created by the State.

ARTICLE 8. PUBLIC INFORMATION AND CONFIDENTIALITY

A. Public Information. The State will comply with Government Code, Chapter 552, the Public Information Act, and 43 Texas Administrative Code §3.10 et seq. in the release of information produced under this contract.

B. Confidentiality. The Engineer shall not disclose information obtained from the State under this contract without the express written consent of the State.

C. Access to Information. The Engineer is required to make any information created or exchanged with the state pursuant to this contract, and not otherwise excepted from disclosure under the Texas Public Information Act, available in a format that is accessible by the public at no additional charge to the state.

ARTICLE 9. PERSONNEL, EQUIPMENT AND MATERIAL

A. Engineer Resources. The Engineer shall furnish and maintain quarters for the performance of all services, in addition to providing adequate and sufficient personnel and equipment to perform the services required under the contract. The Engineer certifies that it presently has adequate qualified personnel in its employment for performance of the services required under this contract, or it will be able to obtain such personnel from sources other than the State.

B. Removal of Contractor Employee. All employees of the Engineer assigned to this contract shall have such knowledge and experience as will enable them to perform the duties assigned to them. The State may instruct the Engineer to remove any employee from association with work authorized in this contract if, in the sole opinion of the State, the work of that employee does not comply with the terms of this contract or if the conduct of that employee becomes detrimental to the work.

C. Replacement of Key Personnel. The Engineer must notify the State in writing as soon as possible, but no later than three business days after a project manager or other key personnel is removed from association with this contract, giving the reason for removal.

D. State Approval of Replacement Personnel. The Engineer may not replace the project manager or key personnel without prior consent of the State. The State must be satisfied that the new project manager or other key personnel is qualified to provide the authorized services. If the State determines that the new project manager or key personnel is not acceptable, the Engineer may not use that person in that capacity and shall replace him or her with one satisfactory to the State within forty-five (45) days.

E. Ownership of Acquired Property. Except to the extent that a specific provision of this contract states to the contrary, the State shall own all intellectual property acquired or developed under this contract and all

equipment purchased by the Engineer or its subcontractors under this contract. All intellectual property and equipment owned by the State shall be delivered to the State when the contract terminates, or when it is no longer needed for work performed under this contract, whichever occurs first.

ARTICLE 10. LICENSE FOR TxDOT LOGO USE

A. Grant of License; Limitations. The Engineer is granted a limited revocable non-exclusive license to use the registered TxDOT trademark logo (TxDOT Flying "T") on any deliverables prepared under this contract that are the property of the State. The Engineer may not make any use of the registered TxDOT trademark logo on any other materials or documents unless it first submits that request in writing to the State and receives approval for the proposed use. The Engineer agrees that it shall not alter, modify, dilute, or otherwise misuse the registered TxDOT trademark logo or bring it into disrepute.

B. Notice of Registration Required: The Engineer's use of the Flying 'T' under this article shall be followed by the capital letter R enclosed within a circle (®) that gives notice that the Flying 'T' is registered in the United States Patent and Trademark Office (USPTO).

C. No Assignment or Sublicense. The Engineer may not assign or sublicense the rights granted by this article without the prior written consent of the State.

D. Term of License. The license granted to the Engineer by this article shall terminate at the end of the term specified in Article 2 of this contract.

ARTICLE 11. SUBCONTRACTING

A. Prior Approval. The Engineer shall not assign, subcontract or transfer any portion of professional services related to the work under this contract without prior written approval from the State.

B. DBE/HUB Compliance. The Engineer's subcontracting program shall comply with the requirements of Attachment H of the contract (DBE/HUB Requirements).

C. Required Provisions. All subcontracts for professional services shall include the provisions included in Attachment A, General Provisions, and any provisions required by law. The Engineer is authorized to pay subproviders in accordance with the terms of the subcontract, and the basis of payment may differ from the basis of payment by the State to the Engineer.

D. Prior Review. Subcontracts for professional services in excess of $25,000 may be reviewed by the State prior to performance of work thereunder.

E. Engineer Responsibilities. No subcontract relieves the Engineer of any responsibilities under this contract.

ARTICLE 12. INSPECTION OF WORK

A. Review Rights. The State and the U.S. Department of Transportation, when federal funds are involved, and any of their authorized representatives shall have the right at all reasonable times to review or otherwise evaluate the work performed hereunder and the premises in which it is being performed.

B. Reasonable Access. If any review or evaluation is made on the premises of the Engineer or a subprovider, the Engineer shall provide and require its subproviders to provide all reasonable facilities and assistance for the safety and convenience of the state or federal representatives in the performance of their duties.

ARTICLE 13. SUBMISSION OF REPORTS

All applicable study reports shall be submitted in preliminary form for approval by the State before a final report is issued. The State's comments on the Engineer's preliminary report must be addressed in the final report.

ARTICLE 14. VIOLATION OF CONTRACT TERMS

A. Increased Costs. Violation of contract terms, breach of contract, or default by the Engineer shall be grounds for termination of the contract, and any increased or additional cost incurred by the State arising from the Engineer's default, breach of contract or violation of contract terms shall be paid by the Engineer.

B. Remedies. This agreement shall not be considered as specifying the exclusive remedy for any default, but all remedies existing at law and in equity may be availed of by either party and shall be cumulative.

ARTICLE 15. TERMINATION

A. Causes. The contract may be terminated before the stated completion date by any of the following conditions.

1. By mutual agreement and consent, in writing from both parties.
2. By the State by notice in writing to the Engineer as a consequence of failure by the Engineer to perform the services set forth herein in a satisfactory manner.
3. By either party, upon the failure of the other party to fulfill its obligations as set forth herein.
4. By the State for reasons of its own, not subject to the mutual consent of the Engineer, by giving thirty business days notice of termination in writing to the Engineer.
5. By the State, if the Engineer violates the provisions of Attachment A, General Provisions Article 21, Gratuities, or Attachment H, Disadvantaged Business Enterprise/Historically Underutilized Business Requirements.
6. By satisfactory completion of all services and obligations described herein.

B. Measurement. Should the State terminate this contract as herein provided, no fees other than fees due and payable at the time of termination shall thereafter be paid to the Engineer. In determining the value of the work performed by the Engineer prior to termination, the State shall be the sole judge. Compensation for work at termination will be based on a percentage of the work completed at that time. Should the State terminate this contract under paragraph (4) or (5) above, the Engineer shall not incur costs during the thirty-day notice period in excess of the amount incurred during the preceding thirty days.

C. Value of Completed Work. If the Engineer defaults in the performance of this contract or if the State terminates this contract for fault on the part of the Engineer, the State will give consideration to the following when calculating the value of the completed work: (1) the actual costs incurred (not to exceed the rates set forth in Attachment E, Fee Schedule) by the Engineer in performing the work to the date of default; (2) the amount of work required which was satisfactorily completed to date of default; (3) the value of the work which is usable to the State; (4) the cost to the State of employing another firm to complete the required work; (5) the time required to employ another firm to complete the work; and (6) other factors which affect the value to the State of the work performed.

D. Calculation of Payments. The State shall use the fee schedule set forth in Attachment E to the contract (Fee Schedule) in determining the value of the work performed up to the time of termination. In the case of partially completed engineering services, eligible costs will be calculated as set forth in Attachment E, Fee Schedule. The sum of the provisional overhead percentage rate for payroll additives and for general and administrative overhead costs during the years in which work was performed shall be used to calculate partial payments. Any portion of the fixed fee not previously paid in the partial payments shall not be included in the final payment.

E. Excusable Delays. Except with respect to defaults of subproviders, the Engineer shall not be in default by reason of any failure in performance of this contract in accordance with its terms (including any failure to progress in the performance of the work) if such failure arises out of causes beyond the control and without the default or negligence of the Engineer. Such causes may include, but are not restricted to, acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather.

F. Surviving Requirements. The termination of this contract and payment of an amount in settlement as prescribed above shall extinguish the rights, duties, and obligations of the State and the Engineer under this contract, except for those provisions that establish responsibilities that extend beyond the contract period.

G. Payment of Additional Costs. If termination of this contract is due to the failure of the Engineer to fulfill its contract obligations, the State may take over the project and prosecute the work to completion, and the Engineer shall be liable to the State for any additional cost to the State.

ARTICLE 16. COMPLIANCE WITH LAWS

The Engineer shall comply with all applicable federal, state and local laws, statutes, codes, ordinances, rules

and regulations, and the orders and decrees of any court, or administrative bodies or tribunals in any manner affecting the performance of this contract, including, without limitation, worker's compensation laws, minimum and maximum salary and wage statutes and regulations, nondiscrimination, and licensing laws and regulations. When required, the Engineer shall furnish the State with satisfactory proof of its compliance therewith.

ARTICLE 17. INDEMNIFICATION

A. Errors, Omissions, Negligent Acts. The Engineer shall save harmless the State and its officers and employees from all claims and liability due to activities of itself, its agents, or employees, performed under this contract and which are caused by or result from error, omission, or negligent act of the Engineer or of any person employed by the Engineer.

B. Attorney Fees. The Engineer shall also save harmless the State from any and all expense, including, but not limited to, attorney fees which may be incurred by the State in litigation or otherwise resisting said claim or liabilities which may be imposed on the State as a result of such activities by the Engineer, its agents, or employees.

ARTICLE 18. ENGINEER'S RESPONSIBILITY

A. Accuracy. The Engineer shall be responsible for the accuracy of work and shall promptly make necessary revisions or corrections resulting from its errors, omissions, or negligent acts without compensation.

B. Errors and Omissions. The Engineer's Responsibility for all questions arising from design errors or omissions will be determined by the State. All decisions shall be in accordance with the State's "Consultant Errors & Omissions Correction and Collection Procedures" and Texas Government Code §2252.905. The Engineer will not be relieved of the responsibility for subsequent correction of any such errors or omissions or for clarification of any ambiguities until after the construction phase of the project has been completed.

C. Seal. The responsible Engineer shall sign, seal and date all appropriate engineering submissions to the State in accordance with the Texas Engineering Practice Act and the rules of the Texas Board of Professional Engineers.

D. Resealing of Documents. Once the work has been sealed and accepted by the State, the State, as the owner, will notify the party to this contract, in writing, of the possibility that a State engineer, as a second engineer, may find it necessary to alter, complete, correct, revise or add to the work. If necessary, the second engineer will affix his seal to any work altered, completed, corrected, revised or added. The second engineer will then become responsible for any alterations, additions or deletions to the original design including any effect or impacts of those changes on the original engineer's design.

ARTICLE 19. NONCOLLUSION

A. Warranty. The Engineer warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Engineer, to solicit or secure this contract and that it has not paid or agreed to pay any company or engineer any fee, commission, percentage, brokerage fee, gifts, or any other consideration, contingent upon or resulting from the award or making of this contract.

B. Liability. For breach or violation of this warranty, the State shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or compensation, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

ARTICLE 20. INSURANCE

The Engineer certifies that it has insurance on file with Contract Services of the Texas Department of Transportation in the amount specified on Texas Department of Transportation Form 1560-CS Certificate of Insurance, as required by the State. No other proof of insurance is acceptable to the State. The Engineer certifies that it will keep current insurance on file with that office for the duration of the contract period. If insurance lapses during the contract period, the Engineer must stop work until a new certificate of insurance is provided.

ARTICLE 21. GRATUITIES

A. Employees Not to Benefit. Texas Transportation Commission policy mandates that employees of the

Texas Department of Transportation shall not accept any benefit, gift or favor from any person doing business with or who reasonably speaking may do business with the State under this contract. The only exceptions allowed are ordinary business lunches and items that have received the advance written approval of the Executive Director of the Texas Department of Transportation.

B. Liability. Any person doing business with or who reasonably speaking may do business with the State under this contract may not make any offer of benefits, gifts or favors to department employees, except as mentioned above. Failure on the part of the Engineer to adhere to this policy may result in the termination of this contract.

ARTICLE 22. DISADVANTAGED BUSINESS ENTERPRISE OR HISTORICALLY UNDERUTILIZED BUSINESS REQUIREMENTS

The Engineer agrees to comply with the requirements set forth in Attachment H, Disadvantaged Business Enterprise or Historically Underutilized Business Subcontracting Plan Requirements with an assigned goal or a zero goal, as determined by the State.

ARTICLE 23. MAINTENANCE, RETENTION AND AUDIT OF RECORDS

A. Retention Period. The Engineer shall maintain all books, documents, papers, accounting records and other evidence pertaining to costs incurred and services provided (hereinafter called the Records). The Engineer shall make the records available at its office during the contract period and for seven (7) years from the date of final payment under this contract, until completion of all audits, or until pending litigation has been completely and fully resolved, whichever occurs last.

B. Availability. The State or any of its duly authorized representatives, the Federal Highway Administration, the United States Department of Transportation, Office of Inspector General, and the Comptroller General shall have access to the Engineer's Records which are directly pertinent to this contract for the purpose of making audits, examinations, excerpts and transcriptions.

ARTICLE 24. NEPOTISM DISCLOSURE

A. In this section the term "relative" means:

(1) a person's great grandparent, grandparent, parent, aunt or uncle, sibling, niece or nephew, spouse, child, grandchild, or great grandchild, or

(2) the grandparent, parent, sibling, child, or grandchild of the person's spouse.

B. A notification required by this section shall be submitted in writing to the person designated to receive official notices under this contract and by first-class mail addressed to Contract Services Office, Texas Department of Transportation, 125 East 11th Street, Austin Texas 78701. The notice shall specify the Engineer's firm name, the name of the person who submitted the notification, the contract number, the district, division, or office of TxDOT that is principally responsible for the contract, the name of the relevant Engineer employee, the expected role of the Engineer employee on the project, the name of the TxDOT employee who is a relative of the Engineer employee, the title of the TxDOT employee, the work location of the TxDOT employee, and the nature of the relationship.

C. By executing this contract, the Engineer is certifying that the Engineer does not have any knowledge that any of its employees or of any employees of a subcontractor who are expected to work under this contract have a relative that is employed by TxDOT unless the Engineer has notified TxDOT of each instance as required by subsection (b).

D. If the Engineer learns at any time that any of its employees or that any of the employees of a subcontractor who are performing work under this contract have a relative who is employed by TxDOT, the Engineer shall notify TxDOT under subsection (b) of each instance within thirty days of obtaining that knowledge.

E. If the Engineer violates this section, TxDOT may terminate the contract immediately for cause, may impose any sanction permitted by law, and may pursue any other remedy permitted by law.

ARTICLE 25. CIVIL RIGHTS COMPLIANCE

(1) Compliance with Regulations: The Engineer shall comply with the regulations of the Department of Transportation, Title 49, Code of Federal Regulations, Parts 21, 25, 27and 28 as they relate to nondiscrimination; also Executive Order 11246 titled Equal Employment Opportunity as amended by Executive Order 11375.

(2) Nondiscrimination: The Engineer, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex, or national origin in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

(3) Solicitations for Subcontracts, Including Procurement of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the Engineer for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Engineer of the Engineer's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, sex, or national origin.

(4) Information and Reports: The Engineer shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and facilities as may be determined by the Texas Department of Transportation or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of the Engineer is in the exclusive possession of another who fails or refuses to furnish this information, the Engineer shall so certify to the Texas Department of Transportation or the Federal Highway Administration, as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of the Engineer's noncompliance with the nondiscrimination provisions of this contract, the Texas Department of Transportation shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

(a) withholding of payments to the Engineer under the contract until the Engineer complies and/or
(b) cancellation, termination, or suspension of the contract, in whole or in part.

(6) Incorporation of Provisions: The Engineer shall include the provisions of paragraphs (1) through (5) in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Engineer shall take such action with respect to any subcontract or procurement as the Texas Department of Transportation or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance provided, however, that in the event an Engineer becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Engineer may request the Texas Department of Transportation to enter into such litigation to protect the interests of the State; and, in addition, the Engineer may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE 26. PATENT RIGHTS

The State and the U. S. Department of Transportation shall have the royalty free, nonexclusive and irrevocable right to use and to authorize others to use any patents developed by the Engineer under this contract.

ARTICLE 27. COMPUTER GRAPHICS FILES

The Engineer agrees to comply with Attachment G, Computer Graphics Files for Document and Information Exchange, if determined by the State to be applicable to this contract.

ARTICLE 28. CHILD SUPPORT CERTIFICATION

Under Section 231.006, Texas Family Code, the Engineer certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate. If the above certification is shown to be false, the Engineer is liable to the state for attorney's fees, the cost necessary to complete the contract, including the cost of advertising and awarding a second contract, and any other damages provided by law or the contract. A child support obligor or business entity ineligible to receive payments because of a payment delinquency of more than thirty (30) days remains ineligible until: all

arrearages have been paid; the obligor is in compliance with a written repayment agreement or court order as to any existing delinquency; or the court of continuing jurisdiction over the child support order has granted the obligor an exemption from Subsection (a) of Section 231.006, Texas Family Code, as part of a court-supervised effort to improve earnings and child support payments.

ARTICLE 29. DISPUTES

A. Disputes Not Related to Contract Services. The Engineer shall be responsible for the settlement of all contractual and administrative issues arising out of any procurement made by the Engineer in support of the services authorized herein.

B. Disputes Concerning Work or Cost. Any dispute concerning the work hereunder or additional costs, or any non-procurement issues shall be settled in accordance with 43 Texas Administrative Code §9.2.

ARTICLE 30. SUCCESSORS AND ASSIGNS

The Engineer and the State do each hereby bind themselves, their successors, executors, administrators and assigns to each other party of this agreement and to the successors, executors, administrators and assigns of such other party in respect to all covenants of this contract. The Engineer shall not assign, subcontract or transfer its interest in this contract without the prior written consent of the State.

ARTICLE 31. SEVERABILITY

In the event any one or more of the provisions contained in this contract shall for any reason, be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and this contract shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

ARTICLE 32. PRIOR CONTRACTS SUPERSEDED

This contract constitutes the sole agreement of the parties hereto for the services authorized herein and supersedes any prior understandings or written or oral contracts between the parties respecting the subject matter defined herein.

ARTICLE 33. CONFLICT OF INTEREST

A. Representation by Engineer.

The Engineer represents that its firm has no conflict of interest that would in any way interfere with its or its employees' performance of services for the department or which in any way conflicts with the interests of the department. The Engineer further certifies that this agreement is not barred because of a conflict of interest pursuant to Texas Government Code, Section 2261.252, between it and the State. Specifically, the Engineer certifies that none of the following individuals, nor any or their family members within the second degree of affinity or consanguinity, owns 1% or more interest, or has a financial interest as defined under Texas Government Code, Section 2261.252(b), in the Engineer: any member of the Texas Transportation Commission, TxDOT's Executive Director, General Counsel, Chief of Procurement and Field Support Operations, Director of Procurement, or Director of Contract Services. The firm shall exercise reasonable care and diligence to prevent any actions or conditions that could result in a conflict with the department's interests.

B. Certification Status. The Engineer certifies that it is not:

1. a person required to register as a lobbyist under Chapter 305, Government Code;
2. a public relations firm; or
3. a government consultant.

C. Environmental Disclosure. If the Engineer will prepare an environmental impact statement or an environmental assessment under this contract, the Engineer certifies by executing this contract that it has no financial or other interest in the outcome of the project on which the environmental impact statement or environmental assessment is prepared.

D. Restrictions on Testing. If the Engineer will perform commercial laboratory testing under this contract, on any project the Engineer may not perform more than one of the following types of testing:

1. verification testing;

2. quality control testing; or
3. independent assurance testing

ARTICLE 34. OFFICE OF MANAGEMENT AND BUDGET (OMB) AUDIT REQUIREMENTS
The parties shall comply with the requirements of the Single Audit Act of 1984, P.L. 98-502, ensuring that the single audit report includes the coverage stipulated in 2 CFR 200.

ARTICLE 35. DEBARMENT CERTIFICATIONS
The parties are prohibited from making any award at any tier to any party that is debarred or suspended or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549, "Debarment and Suspension." By executing this agreement, the Engineer certifies that it is not currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549. The parties to this contract shall require any party to a subcontract or purchase order awarded under this contract to certify its eligibility to receive Federal funds and, when requested by the State, to furnish a copy of the certification.

ARTICLE 36. E-VERIFY CERTIFICATION
Pursuant to Executive Order RP-80, Engineer certifies and ensures that for all contracts for services, Engineer shall, to the extent permitted by law, utilize the United States Department of Homeland Security's E-Verify system during the term of this agreement to determine the eligibility of:

1. All persons employed by Engineer during the term of this agreement to perform duties within the State of Texas; and
2. All persons, including subcontractors, assigned by Engineer to perform work pursuant to this agreement.

Violation of this provision constitutes a material breach of this agreement.

ARTICLE 37. RESTRICTIONS ON EMPLOYMENT OF FORMER STATE OFFICER OR EMPLOYEE
The Engineer shall not hire a former state officer or employee of a state agency who, during the period of state service or employment, participated on behalf of the state agency in this agreement's procurement or its negotiation until after the second anniversary of the date of the officer's or employee's service or employment with the state agency ceased.

ATTACHMENT B

SERVICES TO BE PROVIDED BY THE STATE

I. GENERAL REQUIREMENTS

The State will prepare or provide:

A. Name, address and phone number of the State's project manager.

B. Review of recommendations offered by the Engineer and approve or reject any or all work performed under this contract.

C. Processing of all periodic payment requests submitted by the Engineer.

D. Assistance in the coordination and scheduling of site visits.

II. ROUTE AND DESIGN STUDIES

The State will:

A. Provide As-built Plans if available.
B. Provide Project Information and other Documentation.
C. Provide existing geotechnical information, if available.
D. Provide available Environmental Assessment.
E. Provide Map File, Topographic (Planimetric) Base File and Aerial Photography.
F. Provide approved traffic data.
G. Provide DCIS project information.
H. Provide Value Engineering Report, if available and applicable.

III. SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES, AND PUBLIC INVOLVEMENT

The State will:

A. Provide available project development documents, environmental assessments or impacts, schematics, typical sections, public involvement records, etc.

B. Review and process each necessary environmental and public involvement document prior to letting of the construction contract.

C. Locate suitable facilities, advertise, and conduct each required public meeting.

D. Provide designated State representatives for each public meeting.

E. Provide a court reporter if necessary for public meetings.

F. Review the information and material developed by the Engineer to be presented at each public meeting or public hearing three weeks before any such event. The State will return review comments to the Engineer two weeks before each such meetings or hearings, if applicable.

G. Provide any records available which would assist in the completion of the environmental services.

IV. RIGHT OF WAY DATA

The State will prepare or provide:

A. Available existing right of way plans for the proposed project location.

B. All Right-Of-Way (ROW) appraisals and acquisitions, if applicable.

V. DESIGN SURVEYS AND CONSTRUCTION SURVEYS

The State will prepare or provide:

A. If available and pertinent to each assigned project, the following information:

1. The Control, Section, and Job Number (CSJ);
2. Copies of the latest Horizontal and Vertical Control Data;
3. An approved Schematic Design Layout;
4. Planimetric (2D) and digital Terrain Model (3D) Files;
5. Approved District Design Standards such as Title Sheets with Title Blocks; and
6. Diagrams, sketches, photographs, and other approved documents.

VI. ROADWAY DESIGN CONTROLS

The State will:

A. Provide As-built plans of the existing project facilities, if available.

VII. DRAINAGE

A. Provide existing hydraulic and hydrologic studies associated with the project and project area, if available.

B. Provide areas of wetlands delineation to be surveyed by the Engineer, if required.

VIII. SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION (PERMANENT)

The State will prepare or provide:

A. Traffic signal justification warrants, if applicable.

B. Available traffic counts, traffic projections and accident data, if available.

IX. MISCELLANEOUS (ROADWAY)

The State will prepare or provide:

A. Example estimates, district general notes and standards, sample specification lists and related hard copy documentation for the Engineer's use in preparing the preliminary estimate, general notes and specifications.

B. Tabulation of current applicable bid process, if applicable.

C. Negotiations with each project utility company for relocation agreements or required relocation as applicable.

D. Planimetric layout identifying underground utility locations. Utility location information will be compiled from State Subsurface Utility Engineering (SUE) projects and as-builts provided by utility companies. Existing SUE Level "B" information will be provided in electronic format for Microstation at those locations where further studies are deemed necessary.

E. Approved pavement design, including the thickness and specification for each pavement layer and specifications for sub grade stabilization.

F. Approvals from local, regional, state, and federal agencies, and provide assistance to the Engineer to obtain the required data and information.

X. PROJECT MANAGEMENT AND ADMINISTRATION

The State will:

A. Review, approve and update Project Design Criteria.

B. Review of Deliverables.

C. Provide copies of preferred District Details to be used.

D. Provide copies of preferred District Standards to be used.

E. Prepare final General Notes and final Specification Data Sheets.

XI. BRIDGE DESIGN

The State will prepare or provide:

A. As-built plans of existing structures, if available, National Bridge Inventory (NBI), and applicable Brinsap report.

B. Written approval of preliminary bridge layouts before bridge design work begins.

XII. CONSTRUCTION PHASE SERVICES

A. Shop drawings and related submittals received from the contractor or fabricators.

B. Request for applicable change order plan modifications that are based on changed conditions or a request by the State to modify the design based on field conditions or applicable updates to the State's standards and criteria.

XIII. ADDITIONAL RESPONSIBILITIES

The State will prepare or provide:

A. Provide design criteria for roadway, structures, drainage, and hydraulics.
B. Interface with local, regional, State and Federal agencies or other entities on behalf of Engineer.

C. Timely reviews in accordance with Exhibit C, "Work Schedule" of the Work Authorization and decisions to enable the Engineer to maintain the project schedule as approved by the State.

D. Electronic copies of design files containing, for example, a sample title sheet, plan profile sheet, plan sheet, sheet quantities and storm water pollution prevention plan (SW3P) sheet, if available and applicable.

E. Provide milestone guidelines as applicable to the district the work is being performed.

F. Secure all required permits and agreements.

G. Radio tower shop drawings, design calculations, and Tower Information Sheet including foundation calculations.

H. General letter of introduction from the District on State letterhead for the Engineer to use as the letter of introduction for right-of-entry communications. The State will meet with landowners that refuse or do not respond to right-of-entry (ROE) requests and assist in obtaining the ROE forms.

ATTACHMENT C

SERVICES TO BE PROVIDED BY THE ENGINEER

The work to be performed by the Engineer shall consist of providing engineering services required for the preparation of plans, specifications and estimates (PS&E) and related documents, for various On-System and Off-System Bridge replacements. These services may include preparing roadway and bridge design, hydrologic and hydraulic design, traffic signal design, survey, geotechnical data collection, and construction phase services necessary to support the design process.

GENERAL REQUIREMENTS

1.1. Design Criteria. The Engineer shall prepare all work in accordance with the latest version of applicable State's procedures, specifications, manuals, guidelines, standard drawings, standard specifications or previously approved special provisions and special specifications to include: the *PS&E Preparation Manual*, *Roadway Design Manual*, *Hydraulic Design Manual*, the *Texas Manual on Uniform Traffic Control Devises* (TMUTCD), *Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, 2004*, and other State approved manuals. When design criteria are not identified in State manuals, the Engineer shall notify the State and refer to the American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Street,* (latest Edition). In addition, the Engineer shall follow the guidelines shown in *Developing PS&E for a particular District* which the Engineer may download from the State's website. The Engineer shall prepare each Plan, Specification, and Estimate (PS&E) package in a form suitable for letting through the State's construction contract bidding and awarding process.

The Engineer shall identify, prepare exhibits and complete all necessary forms for each Design Exception and Waiver required within project limits prior to the 30% project completion submittal. The Engineer shall submit each exception and waiver to the State for coordination and processing of approvals. If subsequent changes require additional exceptions, the Engineer shall notify the State in writing as soon as possible after identification of each condition that may warrant a design exception or waiver.

The Engineer shall perform all work in accordance with the following references, except where variances are permitted in writing by the state. The Engineer is responsible for purchasing all the necessary references needed for assigned projects.

- Standard Specifications for Construction of Highways, Streets, and Bridges – TxDOT
- Special Provisions and Special Specifications – TxDOT
- Transportation Planning Policy Manual – TxDOT
- Transportation Planning Process Manual – TxDOT
- Transportation Programming and Scheduling Manual – TxDOT
- Traffic Data and Analysis Manual – TxDOT
- Transportation Multimodal Systems Manual – TxDOT
- Texas Reference Marker System user's manual – TxDOT
- Environmental Manual – TxDOT
- Bridge Detailing Guide – TxDOT
- LRFD Bridge Design Manual – TxDOT
- Bridge Inspection Manual – TxDOT
- Bridge Project Development Manual – TxDOT
- Bridge Railing Manual – TxDOT
- Concrete Repair Manual – TxDOT
- Geotechnical Manual – TxDOT
- Hydraulic Design Manual – TxDOT
- Standard Specifications for Highway bridges – AASHTO
- AASHTO LRFD Bridge Design Specifications – AASHTO
- Manual for Bridge Evaluation - AASHTO
- Access Management Manual – TxDOT
- DCIS User Manual – TxDOT

- Landscape and Aesthetics Design manual – TxDOT
- Pavement Design Manual – TxDOT
- Flexible Pavement Design System (FPS) 19: User's Manual – TxDOT
- Project Development Process manual – TxDOT
- Plans Specifications and Estimates (PS&E) Preparation Manual – TxDOT
- Roadway Design Manual – TxDOT
- A Policy on Geometric Design of Highways and Streets ("The Green Book") AASHTO
- Highway Capacity Manual Special Report 209 – Texas Research Board (TRB)
- Technical Advisory T6640.8A- FHWA
- Traffic Noise Guidelines – TxDOT
- Air Quality Guidelines – TxDOT
- AASHTO Guide for Design of Pavement Structures – AASHTO
- Texas Manual on Uniform Traffic Control Devices – TxDOT
- Standard Highway Sign Design for Texas – TxDOT
- Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals – AASHTO
- ROW Utility – TxDOT
- Volume 1-8 of the Right of Way Collection – TxDOT
- Appraisal and Review Manual – TxDOT
- Real Estate Acquisition Guide for Local Public Agencies – TxDOT
- Highway Illumination Manual – TxDOT
- Pavement Marking Handbook – TxDOT
- Procedures for Establishing Speed zones – TxDOT
- Railroad Operations Volume – TxDOT
- Safe Routes to School Program Guidelines – TxDOT
- Traffic Engineering Agreements – TxDOT
- Traffic Safety Program Manual – TxDOT
- Traffic Signals Manual – TxDOT
- Materials and Tests Operations – TxDOT
- Material Specifications – TxDOT
- Code of Federal Regulations, Title 23 – "Highway" – Federal Register
- Stand Alone manual Notice 97-2: Procedures for Sealing Engineering Documents –TxDOT
- Administrative Circular No. 25-84: Soils Information for High Mast Lighting, Overhead Sign Bridges, and Retaining Walls – TxDOT
- Administrative Circular No. 25-95: Geotechnical Design – TxDOT
- TxDOT Survey Manual

1.2. Right-of-Entry and Coordination. The Engineer shall notify the State and secure permission to enter private property to perform any surveying, environmental, engineering or geotechnical activities needed off State right-of-way. In pursuance of the State's policy with the general public, the Engineer shall not commit acts which would result in damages to private property, and the Engineer shall make every effort to comply with the wishes and address the concerns of affected private property owners. The Engineer shall contact each property owner prior to any entry onto the owner's property, and shall request concurrence from the State prior to each entry.

The Engineer shall notify the State and coordinate with adjacent engineers on all controls at project interfaces. The Engineer shall document the coordination effort, and each engineer shall provide written concurrence regarding the agreed project controls and interfaces. In the event the Engineer and the other adjacent engineers are unable to agree, the Engineer and each adjacent engineer shall meet jointly with the State for resolution. The State will have authority over the Engineer's disagreements and the State's decision will be final.

The Engineer shall prepare each exhibit necessary for approval by each railroad, utility, and other governmental or regulatory agency in compliance with the applicable format and guidelines required by each entity and as approved by the State. The Engineer shall notify the State in writing prior to beginning any work on any outside agency's exhibit.

1.3. Progress Reporting and Invoicing. The Engineer shall invoice according to Function Code breakdowns shown in Attachment "C" of the Contract for Engineering Services and Exhibit "D" - *Fee Schedule*, of each Work Authorization. The Engineer shall submit each invoice in a format acceptable to the State.

With each invoice, the Engineer shall include a completed Projected vs. Actual Contract Invoices form. The Engineer shall submit a monthly written progress report to the State's Project Manager regardless of whether the Engineer is invoicing for that month. The Engineer's written progress report shall describe activities during the reporting period; activities planned for the following period; problems encountered and actions taken to remedy them; list of meetings attended; and overall status, including a per cent complete by task.

The Engineer shall prepare both a design time schedule using the latest version of Primavera or SureTrak® software, and an estimated construction contract time schedule, using the latest version of Primavera software in accordance with the State's *Administrative Circular No. 17-93*. If Suretrak software is used for the design time schedule, the Engineer shall set up using the Concentric (P3) type option. The schedules shall indicate tasks, subtasks, critical dates, milestones, deliverables and review requirements in a format that depicts the interdependence of the various items. The Engineer shall provide assistance to State personnel in interpreting the schedules. The Engineer shall schedule milestone submittals at 30%, 60%, 90%, and (100%) final project completion phases. The Engineer shall advise the State in writing if the Engineer is not able to meet the scheduled milestone review date.

Once the project goes to letting, all electronic files shall be delivered within 30 days of written request in conformance with the latest version of the State's Document and Information Exchange (Attachment G).

Final payment is contingent upon the State's receipt and confirmation by the State's Project Manager that the electronic files run and is formatted in accordance with Attachment G of the contract and all review comments are addressed.

The Engineer shall prepare a letter of transmittal to accompany each document submittal to the State. At a minimum, the letter of transmittal shall include the State's Control-Section-Job (CSJ) number, the highway number, County, project limits, State's contract number, and State's work authorization number.

1.4. Traffic Control Plans. The Engineer shall provide all planning, labor, and equipment to develop and to execute each Traffic Control Plan (TCP) needed by the Engineer to perform services under each Work Authorization. The Engineer shall comply with the requirements of the most recent edition of the TMUTCD. The Engineer shall submit a copy of each TCP to the State for approval prior commencing any work on any State roadway. The Engineer shall provide all signs, flags, and safety equipment needed to execute the approved TCP. The Engineer shall notify the State in writing twenty-four (24) hours in advance of executing each TCP requiring a lane closure, and shall have received written concurrence from the State prior to beginning the lane closure. The Engineer's field crew shall possess a copy of the approved TCP on the job site at all times and shall make the TCP available to the State for inspection upon request. The Engineer shall assign charges for any required traffic control to the applicable function code.

1.5. State-Controlled Waters. The placement of a new structure or modification of an existing structure(s) within State-Controlled waters will require confirmation that said structure(s) lie within the General Land Office (GLO) state owned land and whether the crossing is tidally influenced or not. Consequently, the Engineer should request, as early in the design process as possible, that the State determine whether the proposed improvements are found within the tidal GLO, is a submerged GLO property or a non-tidal GLO property. The State may request assistance from the Engineer to prepare an exhibit demonstrating the location of the proposed improvements on the GLO State Owned Map for the project location of an assigned District.

1.6. Coordination. The Engineer shall coordinate issues and communications with State's internal resource areas through the State's Project Manager. The State will communicate the resolution of issues and provide the Engineer direction through the State's Project Manager.

1.7. Level of Effort. For each work authorization, the Engineer shall base the level of effort at each phase on the prior work developed in earlier phases without unnecessary repetition or re-study. As directed by the State, the Engineer shall provide written justification regarding whether or not additional or repeated level of

effort of earlier completed work is warranted, or if additional detail will be better addressed at a later stage in the project development.

1.8. Quality Assurance and Quality Control. The Engineer shall provide peer review at all levels. For each deliverable, the Engineer shall have some evidence of their internal review and mark-up of that deliverable as preparation for submittal. A milestone submittal is not considered complete unless the required milestone documents and associated internal red-line mark-ups are submitted. The State's project manager may require the Engineer to submit the Engineer's internal mark-up (red-lines) or comments developed as part the Engineer's quality control step. When internal mark-ups are requested by the State in advance, the State, at its sole discretion, may reject the actual deliverable should the Engineer fail to provide the evidence of quality control. The Engineer shall clearly label each document submitted for quality assurance as an internal mark-up document.

The Engineer shall perform Quality Control/Quality Assurance on all survey procedures, field surveys, data, and products prior to delivery to the State. If, at any time, during the course of reviewing a survey submittal it becomes apparent to the State that the submittal contains errors, omissions, or inconsistencies, the State may cease its review and immediately return the submittal to the Engineer for appropriate action by the Engineer. A submittal returned to the Engineer for this reason is not a submittal for purposes of the submission schedule.

1.9. Use of the State's Standards. The Engineer shall identify and insert the applicable, current State's Standard Details, District Standard Details, or miscellaneous details that have been approved for use as frequently as is feasible. The Engineer shall sign, seal, and date each District Standard and miscellaneous detail selected for use is dependent upon the project's location, if the District Standard selected has not been adopted for use in a District. The Engineer shall obtain approval for use of these details during the early stages of design from the State Project Manager or designated State Area Engineer. In addition, these details shall be accompanied by the appropriate general notes, special specifications, special provisions, and method of payment. The Engineer shall retain the responsibility for the appropriate selection of each Standard identified for use within their design.

1.10. Organization of Plan Sheets. The PS&E shall be complete and organized in accordance with Stand-Alone Manual Notice 00-1 entitled "Organization of Plan Sheets" and as identified by the latest edition of a District's "Guidelines for Milestone Submittals". The PS&E package shall be suitable for the bidding and awarding of a construction contract, and in accordance with the latest State's policies and procedures, and the District's PS&E Checklist.

1.11. Limited Access to State's DCIS. The Engineer shall receive limited access to the State's DCIS to update responsible engineer information, sign, seal and date, build specification list and develop Project estimate.

As shown on the table below, the Engineer shall access and update DCIS with the following function codes.

DCIS Update Screens	Required Criteria for Access	DCIS Function Code
S01-Responsible Engineer Update S03-Sealing, Signing & Dating P04-Project Estimate C03-Build Specifications	Consultant Registered Professional Engineer (PE)	CONENG
P04-Project Estimate C03-Build Specifications	Consultant does not have to be a PE	CONEST

The State will require the Engineer to sign forms 1828, Information Security Compliance Agreement; 1980, Request for External Access to the State's Information Systems, 2110; Information Resources Confidentiality Agreement, and DR-IRI Information Access Request Form. These access rights will be revoked after the project is let.

TASK DESCRIPTIONS AND FUNCTION CODES

The Engineer shall categorize each task performed to correspond with the Function Codes (FC) and Task Descriptions.

ROUTE AND DESIGN STUDIES: FUNCTION CODE 110

The Engineer shall conduct route location, alignment studies and related public involvement in order to determine the locally-preferred alternative. The Engineer shall participate in a Value Engineering study as requested by the State.

The Engineer shall perform a detailed Level of Service (LOS) traffic analysis and Interstate Access Justification (IAJ) report using the traffic data and projections approved by the State's Transportation Planning and Programming Division. The Engineer shall prepare the existing and projected traffic volumes and related data for State approval, and provide review, revisions, and evaluations of the traffic data. Based on approved traffic data and the evaluation of alternatives, the Engineer shall develop the design schematic.

The Engineer shall prepare the design schematic using the checklist provided by the State. The horizontal and vertical alignments will be at a scale of 1"=100' (horizontal) and 1"=10' or 1"=20' (vertical). The Engineer shall prepare a colorized design and guide signing schematic based on the proposed locally-preferred alternative. All geometric designs shall be in conformance with the State's Roadway Design Manual except where variances are permitted in writing by the State. The schematic layout shall include the information necessary for proper review and evaluation, and the Engineer shall provide design schematic review, support, and any related design services.

The Engineer shall prepare preliminary cost estimates at the 30%, 60%, 90%, and 100% milestone submittals.

The Engineer shall determine preliminary Right-of-Way requirements. Preliminary drainage analysis and management of traffic during construction shall be a consideration in the development of the design schematic. The Engineer shall participate in project meetings and public meetings as required.

Data to be collected by the Engineer shall include, but not be limited to: (1) Data collection, including "as-built plans", existing schematics, right-of-way maps, and previous corridor studies, reports, and plans conducted by other agencies and groups, environmental documents, existing channel and drainage easement data, existing traffic counts, accident data, current special provision and special specifications. (2) Utility plans and documents from appropriate municipalities and utility companies, and, from the State's utility permitting agencies. (3) Readily available flood plain information and studies from the Federal Emergency Management Agency (FEMA), the United States Corps of Engineers (USACE), local municipalities and other governmental agencies. (4) Obtain graphics files, plans, documents, and other pertinent data for existing and proposed improvements along the proposed corridor. Review collected information and process the data into MicroStation reference files and organize it into project reference notebooks. (5) Conduct field reconnaissance and collect data including a photographic record of notable existing features.

The Engineer shall develop the roadway design criteria based on the controlling factors specified by the State (i.e. 4R, 3R, 2R, or special facilities), by use of the funding categories, design speed, functional classification, roadway class and any other set criteria as set forth in PS&E Preparation Manual, Roadway Design Manual, Bridge Design Manual, Hydraulic Design Manual, and other deemed necessary State approved manuals. In addition, the Engineer shall prepare the Design Summary Report (DSR) and submit it electronically. The Engineer shall obtain written concurrence from the State prior to proceeding with a design if any questions arise during the design process regarding the applicability of State's design criteria.

The Engineer shall plan, conduct, and document a Design Concept Conference (DCC) for establishing fundamental aspects of the project. This conference facilitates agreement to basic project features by concerned parties and enhances relationships between those parties while providing a setting in which the Engineer, State staff, stakeholders and technical personnel can discuss and achieve consensus on all project specific considerations including, but not limited to:

- Roadway and drainage design criteria for the PS&E
- Engineering and environmental constraints and considerations
- Project development schedule
- Other issues as identified

The Engineer shall determine the location of proposed soil borings for bridge design, in accordance with the latest edition of the State's Geotechnical Manual. The State will review and provide comments for a boring layout submitted by the Engineer showing the general location and depths of the proposed borings. Once the Engineer receives the State's review comments they shall perform soil borings (field work), soil testing and prepare the boring logs in accordance with the latest edition of the State's Geotechnical Manual and the State's procedures and design guidelines.

The Engineer shall provide a signed, sealed and dated geotechnical report which contains but is not limited to soil boring locations, boring logs, laboratory test results, generalized subsurface conditions, ground water conditions, piezometer data, analyses and recommendations for settlement and slope stability of the earthen embankments, skin friction tables and design capacity curves including skin friction and point bearing. The skin friction tables and design capacity curves should be present for piling and drilled shaft foundation.

The Engineer shall perform scour analysis to include Grain Size distribution curves with D50 value.

SOCIAL, ECONOMIC AND ENVIROMENTAL STUDIES AND PUBLIC INVOLVEMENT: FUNCTION CODE 120

1. **Informal Meetings:** The Engineer shall provide technical assistance, preparation of exhibits for, and minutes of informal meetings requested by the public to discuss the pending impacts to neighborhoods and businesses due to roadway shutdowns, detours and access restrictions or as deemed necessary. This is not to be confused with the formal public meetings held during the National Environmental Policy Act (NEPA) process during schematic approval for Public Involvement. It is not anticipated that the Engineer's participation will be needed for the NEPA process.
   However, if any assistance (exhibits, attendance, etc.) required for a formal public meeting associated with schematic approval is required it shall be considered as additional work.

2. **Environmental Permits Issues and Commitments (EPIC) Sheets:** The Engineer shall complete the latest version of the EPIC sheets per information provided by the State. The final sheets shall be submitted for the State's signature.

3. **Environmental Study Review:** The State shall provide the draft and final environmental study to the Engineer for review and implementation into the PS&E package. The Engineer shall consider the constructability issues as it relates to the environmental impacts.

4. **Environmental Exhibits:** The Engineer shall prepare the necessary exhibits for the environmental study to be performed by others. The Engineer shall coordinate with the Environmental Project Manager and the State's Environmental Engineer for the preparation of these exhibits.

5. **Cut and Fill Exhibits:** If the information is available, the Engineer shall prepare cut and fill exhibits for delineated wetland.

RIGHT-OF-WAY MAPPING: FUNCTION CODE 130

All standards, procedures and equipment used by the Engineer's Surveyor shall be such that the results of the survey will be in accordance with Board Rule 663.15, as promulgated by the Texas Board of Professional Land Surveyors.

The Engineer shall locate the existing ROW within the project limits from the current project control monuments utilizing the State strip maps if on-system and adjoining property deeds and county records if off-system and prepare an Existing ROW base map for the project.

1. **Right-of-Way Map:** The Engineer shall review and evaluate the proposed or existing right-of-way map to verify that all construction staging and alignment considerations have been taken into account. The Engineer shall make every effort to prevent detours and utility relocations from extending beyond the proposed right-of-way lines. The Engineer shall notify the State in writing if it is necessary to obtain additional construction easements or rights-of-entry and shall provide justification for such action. The

Engineer shall be responsible for identifying and delineating any temporary construction easements in areas outside the State's Right of Way. The State shall secure the necessary legal instruments.

2. **Utility Locations and Layouts:** The Engineer shall coordinate with the State to determine the location of each existing and proposed utility and attend meetings with the various utility companies to discuss potential conflicts. The Engineer shall identify and coordinate with each utility company for relocations required within each construction easement or right-of entry.

3. **Access Management**: The Engineer shall coordinate and evaluate access management within the project limits in accordance with the latest State Access Management Manual or as directed by the State.

DESIGN SURVEYS: FUNCTION CODE 150

This includes performance of surveys associated with the gathering of survey data for topography, cross-sections, and other related work in order to design a project,

1. PURPOSE

The purpose of a design survey is to provide field data in support of transportation systems design.

2. DEFINITIONS

A design survey is defined as the combined performance of research, field work, analysis, computation, and documentation necessary to provide detailed topographic (3-dimensional) mapping of a project site. A design survey may include, but need not be limited to locating existing right-of-way, cross-sections or data to create cross-sections and Digital Terrain Models (DTM), horizontal and vertical location of utilities and improvements, detailing of bridges and other structures, review of right-of-way maps, establishing control points, etc.

1. TASKS TO BE COMPLETED

3.1. Design Surveys

The State will request design surveys on an as needed basis. The surveys will include, but are not limited to the following:

The Engineer shall:

3.1.1. Obtain or collect data to create cross-sections and digital terrain models.

3.1.2. Locate existing utilities.

3.1.3. Locate topographical features and existing improvements.

3.1.4. Provide details of existing bridge structures.

3.1.5. Provide details of existing drainage features, such as culverts, manholes, etc.

3.1.6. Locate wetlands.

3.1.7. Establish additional and verify existing control points. Horizontal and Vertical control ties should be made and tabulated, to other control points in the vicinity, which were established by other sources such as, the National Geodetic Survey (NGS), and the Federal Emergency Management Agency (FEMA), and as directed by the State.

3.1.8. Locate existing right-of-ways.

3.1.9. Review right-of-way maps.

3.1.10. Locate boreholes.

3.1.11. Perform hydrographic surveys.

3.1.12. Update existing control data and prepare survey control data sheets, as directed by the State for inclusion into a construction plan set.

The Engineer shall also prepare a *Survey Control Index Sheet* and a *Horizontal and Vertical Control Sheet*, signed, sealed and dated by the professional engineer in direct responsible charge of the surveying and the responsible RPLS for insertion into the plan set. The *Survey Control Index Sheet* shows an overall view of the project control and the relationship or primary monumentation and control used in the preparation of the project; whereas, the *Horizontal and Vertical Control sheet* identifies the primary survey control and the survey control monumentation used in the preparation of the project. Both the *Survey Control Index Sheet* and the *Horizontal and Vertical Control Sheet* should be used in conjunction with each other.

The following information will be shown on the *Survey Control Index Sheet:*

- Overall view of the project and primary control monuments set for control of the project
- Identification of the control points
- Baseline or centerline
- Graphic (Bar) Scale
- North Arrow
- Placement of note *"The survey control information has been accepted and incorporated into this PS&E"* which will be signed, sealed and dated by a Texas Professional Engineer employed by the State
- RPLS signature, seal, and date
- TxDOT title block containing District Name, County, Highway, and CSJ

The following information will be shown on the *Horizontal and Vertical Control Sheet*:

- Location for each control point, showing baseline and/or centerline alignment and North arrow.
- Station and offset (with respect to the baseline or centerline alignments) of each identified control point.
- Basis of Datum for horizontal control (base control monument/benchmark name/number, datum).
- Basis of Datum for the vertical control (base control monument, benchmark name, number, datum).
- Date of current adjustment of the datum.
- Monumentation set for Control (Description, District name/number and Location ties).
- Surface Adjustment Factor and unit of measurement.
- Coordinates (State Plan Coordinates [SPC] Zone and surface or grid).
- Relevant metadata.
- Graphic (Bar) Scale.
- Placement of note "*The survey control information has been accepted and incorporated into this PS&E"* which will be signed, sealed and dated by a Texas Professional Engineer employed by the State.
- RPLS signature, seal and date.
- TxDOT title block containing District Name, County, Highway, and CSJ.

4. TECHNICAL REQUIREMENTS

4.1. Design surveys and construction surveys shall be performed under the supervision of a RPLS currently registered with the Texas Board of Professional Land Surveying (TBPLS).

4.2. Horizontal ground control used for design surveys and construction surveys, furnished to the Engineer by the State or based on acceptable methods conducted by the Engineer, shall meet the standards of accuracy required by the State.

Reference may be made to standards of accuracy for horizontal control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

4.3. Vertical ground control used for design surveys and construction surveys, furnished to the Engineer by the State or based on acceptable methods conducted by the Engineer, shall meet the standards of accuracy required by the State.

Reference may be made to standards of accuracy for vertical control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

4.4. Side shots or short traverse procedures used to determine horizontal and vertical locations shall meet the following criteria:

4.4.1. Side shots or short traverses shall begin and end on horizontal and vertical ground control as described above.

4.4.2. Standards, procedures, and equipment (may be GPS Equipment, LiDAR, Total Stations, etc.) used shall be such that horizontal locations relative to the control may be reported within the following limits:

a. Bridges and other roadway structures: less than 0.1 of one foot.

b. Utilities and improvements: less than 0.2 of one foot.

c. Cross-sections and profiles: less than 1 foot (natural ground).

d. Bore holes: less than 3 feet.

4.4.3. Standards, procedures, and equipment (may be GPS Equipment, LiDAR, Total Stations, etc.) used shall be such that vertical locations relative to the control may be reported within the following limits:

a. Bridges and other roadway structures: less than 0.02 of one foot.

b. Utilities and improvements: less than 0.1 of one foot.

c. Cross-sections and profiles: less than 0.2 of one foot.

d. Bore holes: less than 0.5 of one foot.

5. DELIVERABLES

The deliverables to be specified in individual work authorizations for design surveys and construction surveys may be any combination of the following:

5.1. Digital Terrain Models (DTM) and the Triangular Irregular Network (TIN) files in a format acceptable by the State.

5.2. Maps, plans, or sketches prepared by the Engineer showing the results of field surveys.

5.3. Computer printouts or other tabulations summarizing the results of field surveys.

5.4. Digital files or media acceptable by the State containing field survey data.

5.5. Maps, plats, plans, sketches, or other documents acquired from utility companies, private corporations, or other public agencies, the contents of which are relevant to the survey.

5.6. Field survey notes, as electronic and/or hard copies.

5.7. An 8 ½ inch by 11 inch survey control data sheet for each control point which shall include, but need not be limited to, a location sketch, a physical description of the point including a minimum of two reference ties, surface coordinates, a surface adjustment factor, elevation, and the horizontal and vertical datums used.

5.8. A digital and/or hard copy of all computer printouts of horizontal and vertical conventional traverses, GPS analysis and results, data including property descriptions with field notes and plats, right-of-way maps, and survey control data sheets.

5.9. All GEOPAK GPK files.

5.10. Survey reports in a format requested by the State.

6. AUTOMATION REQUIREMENTS

6.1. Planimetric design files (DGN) shall be fully compatible with the State's *MicroStation® V8i* graphics program without further modification or conversion.

6.2. Electronically collected and processed field survey data files shall be fully compatible with the State's computer systems without further modification or conversion. All files shall incorporate only those feature codes currently being used by the State.

6.3. DTM shall be fully compatible with the State's *GEOPAK* system without further modification or conversion. All DTM fully edited and rectified to provide a complete digital terrain model with all necessary break lines.

ROADWAY DESIGN CONTROLS: FUNCTION CODE 160

The Engineer shall inform the State of changes made from previous initial meetings regarding each exception, waiver, and variance that may affect the design. The Engineer shall cease all work under this task until the exceptions, waivers, and variances have been resolved between the Engineer and the State unless otherwise directed by the State to proceed. The Engineer shall identify, prepare exhibits and complete all necessary forms for Design Exceptions and Waivers within project limits prior to the 30% Submittal, if possible. These exceptions shall be provided to the State for coordination and processing of approvals.

160.1. Geometric Design.

The Engineer shall:

A. Refine Schematic (This task may be deleted if the schematic is not available and replaced with Preliminary Geometric layout). The Engineer shall review the schematic provided by the State to confirm their understanding of the project and to verify completeness and accuracy of the information. The Engineer shall refine the horizontal and vertical alignment of the design schematic in English units for main lanes, ramps, direct connectors, frontage roads, cross streets, including grade separation structures. The Engineer shall determine vertical clearances at grade separations and overpasses, taking into account the appropriate percent grade and super-elevation rate. Minor modifications in the alignment will be considered to provide optimal design. Modifications must be coordinated with the State and adjacent Engineers. The State must approve the refined schematic prior to the Engineer proceeding to the 30 % milestone submittal, and prior to starting on the bridge layouts.

B. Preliminary Geometric Project Layout. The Engineer shall develop a preliminary geometric project layout (Layout) for the full length of the project to be reviewed and approved by the State prior to the Engineer proceeding with the 30 percent milestone submittal package.

The Layout shall consist of a planimetric file of existing features and the proposed improvements within the existing and any proposed ROW. The Layout shall also include the following features: existing/Proposed ROW, existing/proposed horizontal and vertical alignment and profile grade line, cross culverts, lane widths, cross slopes, ditch slopes, pavement structure, clear zone, dedicated right turn lanes, corner clips, retaining walls (if applicable) guard rail (if applicable), and water surface elevations for various rainfall frequencies, etc. Existing major subsurface and surface utilities shall be shown. The proposed alignment shall avoid as much as possible the relocation of existing utilities. The Engineer shall consider Americans with Disabilities Act (ADA) requirements when developing the layout. The Layout shall be prepared in accordance with the current Roadway Design Manual. The Engineer shall provide horizontal and vertical alignment of the project layout in English units for main lanes and cross streets. Minor alignment alternatives will be considered to provide for an optimal design. The project layout must be coordinated with the State and adjacent Engineers, if any. The Engineer shall also provide proposed and existing typical sections with the profile grade line (PGL),

lane widths, cross slopes, ROW lines, ditch shapes, pavement structures and clear zones depicted, etc.

Flush vs. raised curbed median:

Prior to proceeding with the final preliminary geometric layout the Engineer shall also present to the State for review and approval, alternatives for the median design (flush or raised curb median) with recommendations and cost estimates for each alternative. The Engineer will also attend all necessary meetings to discuss the outcome of the evaluations of the study.

160.2. Roadway Design.

The Engineer shall provide roadway design in accordance with the current edition of the State's Roadway Design Manual. The Engineer shall provide roadway plan and profile drawings using CADD standards as required by the State. The drawings shall consist of a planimetric file of existing features and files of the proposed improvements. The roadway base map shall contain line work that depicts existing surface features obtained from the schematic drawing. Existing major subsurface and surface utilities shall be shown. Existing and proposed right-of-way lines shall be shown. Plan and Profile to be shown on separate or same sheets (this depends upon width of pavement) for main lanes, frontage roads, and direct connectors.

The plan view shall contain the following design elements:

1. Calculated roadway centerlines for mainlanes, ramps, cross streets and frontage roads, as applicable. Horizontal control points shall be shown. The alignments shall be calculated using GEOPAK.
2. Pavement edges for all improvements (mainlanes, direct connectors, ramps, cross streets, driveways and frontage roads, if applicable).
3. Lane and pavement width dimensions.
4. The geometrics of ramps, auxiliary and managed lanes.
5. Proposed structure locations, lengths and widths.
6. Direction of traffic flow on all roadways. Lane lines and arrows indicating the number of lanes shall also be shown.
7. Drawing scale shall be 1"=100'
8. Control of access line, & ROW lines and easements.
9. Begin/end superelevation transitions and cross slope changes.
10. Limits of rip rap, block sod, and seeding.
11. Existing utilities and structures.
12. Benchmark information.
13. Radii call outs, curb location, Concrete Traffic Barrier (CTB), guard fence, crash safety items and American with Disabilities Act Accessibility Guidelines (ADAAG) compliance items.

The profile view shall contain the following design elements:

1. Calculated profile grade for proposed mainlanes (cite direction), direct connectors, ramps, cross streets and frontage roads, if applicable. Vertical curve data, including "K" values shall be shown.
2. Existing and proposed profiles along the proposed centerline of the mainlanes, the outside shoulder line of ramps, and the outside gutter line of the designated (north, south, east or west) bound frontage roads.
3. Water surface elevations at major stream crossing for 2, 5, 10, 25, 50, and 100 year storms.
4. Calculated vertical clearances at grade separations and overpasses, taking into account the appropriate superelevation rate, superstructure depth and required clearance.

5. The location of interchanges, mainlanes, grade separations and ramps (shall include cross sections of any proposed or existing roadway, structure, or utility crossing).

6. Drawing vertical scale to be 1"=10'.

160.3. Typical Sections:

Typical sections shall be required for all proposed and existing roadways and structures. Typical sections shall include width of travel lanes, shoulders, outer separations, border widths, curb offsets, managed lanes, and ROW. The typical section shall also include PGL, centerline, pavement design, longitudinal joints, side slopes, sodding/seeding limits, concrete traffic barriers and sidewalks, if required, station limits, common proposed and existing structures including retaining walls, existing pavement removal (pavement coring shall be performed by the Engineer to determine existing pavement structure for removal items only, see FC 110) riprap, limits of embankment and excavation, etc. The typical sections shall also reference Pay Schedule for Item of work "Ride Quality of Pavement Surface".

160.4. Mainlane and Frontage Road Design: The Engineer shall provide the design of mainlanes with full shoulders, frontage roads, entrance and exit ramps, managed lanes and auxiliary lanes. The design shall be consistent with the approved schematic or refined schematic and the current Roadway Design Manual.

160.5. Interchange. The Engineer shall be responsible for the complete design of the mainlanes and ramps, auxiliary lanes and direct connectors, and managed lanes as shown on the schematic. The structural details of the direct connectors interchange will be provided by the State or the Engineer and will be included with the PS&E submittal. The interchange design shall be consistent with the schematic design and shall include a plan and profile of the thoroughfares, intersection layout, drainage structures, sidewalks, geometrics, signalization, turnaround details, and transitions to existing roadway.

160.6. Cross Streets. The Engineer shall provide an intersection layout detailing the pavement design and drainage design at the intersection of each cross street. The layout shall include the curb returns, geometrics, transition length, stationing, pavement and drainage details. The Engineer shall design for full pavement width to the ROW and provide a transition to the existing roadway.

160.7. Cut and Fill Quantities. The Engineer shall develop an earthwork analysis to determine cut and fill quantities and provide final design cross sections at 100 feet intervals. Cross sections shall be delivered in standard GEOPAK format on 11"x17" sheets or roll plots and electronic files. The Engineer shall provide all criteria and input files used to generate the design cross sections. Cross sections and quantities shall consider existing pavement removals. Annotation shall include at a minimum existing/proposed right of way, side slopes (front & back), profiles, etc.

Two sets of drawings shall be submitted by the Engineer at the 30%, 60%, and 90%, and final submittals, respectively.

160.8. Plan Preparation. The Engineer shall prepare roadway plans, profiles and typical sections for the proposed improvements. Prior to the 30% submittal the Engineer shall schedule a workshop to review profiles and cross-sections with the State. The profile and cross sections shall depict the 2, 5, 10, 25, 50, 100 and 500 year (if available) water surface elevations. The drawings will provide an overall view of the roadway and existing ground elevations with respect to the various storm design frequencies for the length of the project. This will enable the State to determine the most feasible proposed roadway profile. The State will approve the proposed profiles and cross sections before the Engineer continues with the subsequent submittals. This scope of services and the corresponding cost proposal are based on the Engineer preparing plans to construct freeway main lanes, direct connectors, ramps, frontage roads, and cross streets at intersections. The roadway plans shall consist of the types and be organized in the sequence as described in "Stand Alone Manual Notice Number 00-1".

160.9. Wetlands Information. From the information provided by the State, the wetland areas are to be staked, fenced and the delineation surveyed by the Engineer. The survey data shall be electronically transferred to the P&P sheets and the volumes calculated for the delineated areas. The surveying delineation work and electronic transfer of information will be performed under a separate agreement.

160.10. Pavement Design. If applicable, the Engineer shall incorporate the pavement design developed by the State for this project. The Engineer shall implement mainlane and frontage road pavement design of Continuously Reinforced Concrete Pavement (CRCP), Asphalt Stabilized Base (ASB), Portland Cement Treated Base (PCTB), and Lime Treated Subgrade (LTS) as specified in the work authorization.

160.11. Pedestrian and Bicycle Facilities. The Engineer shall coordinate with the State to incorporate pedestrian and bicycle facilities as required or shown on the project's schematic. All pedestrian/bicycle facilities must be designed in accordance with the latest Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Texas Accessibility Standards (TAS), and the AASHTO Guide for the Development of Bicycle Facilities.

DRAINAGE: FUNCTION CODE 161

161.1. Drainage Report.

1. The Engineer shall prepare a single comprehensive drainage study and report of the project area. The report shall be divided into two phases:

   The first phase will include the following items:

   - Obtain existing HEC-2 or HEC-RAS models from applicable drainage authorities to the extent possible, for use in analysis and determination of the existing 2, 5, 10, 25, 50, 100 and 500 year (if available), water surface elevations at bayous, creeks, and ditch crossings along the project. This data will be utilized in the development of design roadway profiles.
   - Profile of natural ground along each proposed grade line of the roadway.
   - Profile of tentative proposed grade line of the roadway.
   - Profile of existing roadway.
   - Identify the existing drainage outfalls.
   - Identify the names of existing creeks, bayous and ditches within the project limits.

2. These profiles will be superimposed on a drawing along with the 2, 5, 10, 25, 50, 100 and 500 year (if available) water surface elevations. The profile drawing will provide an overall view of the roadway/existing ground elevations with respect to the various storm design frequencies for the length of the project. This will enable the State to determine the most feasible proposed roadway profile. These profiles must be submitted to the State and approved before continuing with the preparation of the comprehensive drainage report. NOTE: THE ENGINEER WILL COORDINATE WITH ALL GOVERNMENT AGENCIES THROUGH THE STATE'S DISTRICT OFFICE.

   The second phase will include the following items:

   - Manhole head losses are to be computed as per the State's direction. Also, THYSYS (WINSTORM) computations are not needed for hydraulic grade line investigations. The head losses will be computed with a pressure flow equation generally applicable to pipe running full flow. A hydraulic grade line starting at the outfall channel will be determined for each storm sewer system in order to obtain a design tailwater for each existing system. The design tailwater will be the starting basis for the design of the proposed storm sewer system.
   - For drainage areas, the Engineer shall limit the outfalls into existing storm sewer to existing capacity flows, which will be determined by the Engineer. Alternate flow routes, if feasible, will be looked into for relieving storm sewer overload. The amount of the total detention storage to control storm sewer runoff for the design frequency will be determined based on hydrograph routing, as well as a rough estimate of the available on-site volume.
   - Drainage areas and flows for cross culvert drainage systems will be determined as part of the comprehensive drainage report. Once determined, the sizing of the drainage crossings, hydrologic and hydraulics information will be provided to the State.
   - The Engineer shall prepare a report signed, sealed and dated by a registered/licensed engineer and shall include the preliminary findings of the storm sewer capacities, requirement for line rerouting, preliminary detention storage volumes based on hydrograph and initial

recommendations on how to mitigate the storm impact on the receiving streams. The report will also include preliminary sizing of the trunkline for the proposed gravity storm sewer within the limits of the project, conceptual and generic discussions of the alternatives considered, a comparative cost associated with each alternative and a recommended solution.

- Recommendations at this point should be generic and conceptual in nature, mainly for discussions with the State and the local government entities.

Guideline approach to the 100 year impact analysis:

An impact analysis is required on bayous, creeks and ditches as related to the State and FEMA criteria 10 and 100 year storm. The State required approach for impact prediction is as follows:

- Drainage areas for the existing and proposed conditions.
- The Engineer shall identify the existing drainage outfalls.
- Compute right of way corridor 100 year flood plain volumes for existing and proposed roadway elevations. A decrease in 100 year flood plain volumes is not allowed by the State or other governmental agencies, without adequate offsite mitigation.
- Compute existing and proposed peak flows by using hydraulics and hydrologic methodology and computer models. The additional lanes should be accounted for by increasing percent development.
- Storage computations will be based on hydrograph calculations and peak flows obtained in the item above. A mitigation volume for the 100 year storm will be computed.
- Analyze existing and proposed drainage system and quantify the increase in 100 year peak flows resulting from the roadway improvements.
- Hand calculations shall be provided which quantify the cut and fill within the 100 year flood plain, if any occur.
- Prepare conceptual 100 year sheet flow analysis for project utilizing existing and proposed conditions.
- Obtain current hydrologic and hydraulic computer models from government agencies and review and comment on the models.
- Current models will be updated to existing condition using the available State aerial photographs, and submitted to governmental agencies as the revised existing condition model.
- Analyze proposed roadway and outfall drainage improvements to quantify impacts to revised existing condition model.

This contract does not include the detailed design of outfall improvements outside of the right of way, except for ditch outfall transitions of cross drainage culvert structures to the existing ditch.

161.2. Scour Analyses and Stream Migration Studies. The Engineer shall prepare each scour analysis using methodology approved by the State as required in the work authorization. The Engineer shall select the methodology depending on the site conditions such as the presence of cohesive or cohesionless soil, rock or depth of rock, proposed foundation type, and existing site performance. The Engineer shall use HEC-18 for sites with cohesionless soils unless otherwise approved by the State. For other conditions, the Engineer may use the TSEAS 1993 (Texas Secondary Evaluation and Analysis for Scour) guidelines as approved by the State.

The Engineer shall coordinate with the State prior to commencing any work on any Stream Migration Study. This coordination shall include consultation with the appropriate State technical expert.

161.3. Culvert and Storm Drain Design. The Engineer shall develop design details that minimize the interference with the passage of traffic or incur damage to the highway and local property. The Engineer shall provide layouts, drainage area maps, and design of all drainage components. The Engineer shall design all conventional storm drainage and cross drainage in conformance with the latest edition of State Hydraulic Manual, Districts' criteria, and any specific guidance provided by the State. Storm drain design shall be performed using WinStorm or GEOPAK Drainage. Cross drainage design shall be performed using WINSTORM, HY 8 or HEC RAS. When oversized storm drains are used for detention, the Engineer shall evaluate the hydraulic gradeline throughout the whole system, within project limits, for the design frequency(ies). The Engineer shall coordinate with the State any

proposed changes to the detention systems. The State will assess the effects of such changes on the comprehensive drainage studies. The Engineer shall coordinate with the State and designers of adjacent projects to check that all proposed drainage systems accommodate the proposed construction phasing plan.

The Engineer shall perform the following:

1. Prepare culvert cross sections. (The Engineer should list station locations)
2. Identify areas requiring trench protection, excavation, shoring and de-watering.
3. Prepare drainage area maps.
4. If applicable, prepare plan/profile sheets for storm drain systems and outfall ditches.
5. Select standard details from State or District's list of standards for items such as inlets, manholes, junction boxes and end treatment, etc.
6. Prepare details for non-standard inlets, manholes and junction boxes.
7. Prepare drainage details for outlet protection, outlet structures and utility accommodation structures.
8. Identify pipe strength requirements.
9. Prepare drainage facility quantity summaries.
10. Identify potential utility conflicts and design around them, wherever possible.
11. Take into consideration pedestrian facilities, utility impacts, driveway grades, retaining wall and concrete traffic barrier drainage impacts.
12. Identify existing ground elevation profiles at the ROW lines on storm sewer plan and profile sheets.
13. Locate soil borings every 500 feet along the storm sewer alignment and at every 2000 feet take a piezometric reading.
14. If applicable, prepare Hydraulic Data Sheets for any bridge or cross drainage structures at outfall channel. (Indicate site location such as name of creeks or bayou and stations)

The scope may include extending, adjusting or replacing non bridge-class culvert crossing(s) as specified in the work authorization.

161.4. Temporary Drainage Facilities. The Engineer shall develop plans for all temporary drainage facilities necessary to allow staged construction of the project and to conform with the phasing of adjacent construction projects without significant impact to the hydraulic capacity of the area. Drainage area maps are not required for temporary drainage.

161.5. Layout, Structural Design and Detailing of Drainage Features.

The Engineer shall develop layouts for the following:

1. Culverts: New culverts; culvert replacement.
2. Storm Sewers: New or modified storm sewers; inlets; manholes; trunk lines.
3. Subsurface drainage at retaining walls.
4. Outfall channels within existing ROW
5. Bridge deck drainage systems, including internal drainage piping within the bents where required on structures.
6. Detention ponds, associated outlet structures and details, if applicable. If information not available at the time of initial scoping this work shall be considered as additional work.

The Engineer shall use standard details where practical.

161.6. Floodplain Cut and Fill. Using water surface elevation profiles determined by the comprehensive drainage study, the Engineer shall calculate proposed cut and fill volumes below the 100 year flood elevation.

SIGNING, PAVEMENT MARKINGS AND SIGNALIZATION (PERMANENT); FUNCTION CODE 162

162.1. Signing. The Engineer shall prepare drawings, specifications and details for all signs. The Engineer shall coordinate with the State (and other Engineers as required) for overall temporary, interim and final signing strategies and placement of signs outside contract limits. The Engineer shall:

1. Prepare sign detail sheets for large guide signs showing dimensions, lettering, shields, borders, corner radii, etc., and shall provide a summary of large and small signs.
2. Designate the shields to be attached to guide signs.
3. Illustrate and number the proposed signs on plan sheets.
4. Select each sign foundation from State Standards.

162.2. Pavement Marking. The Engineer shall detail both permanent and temporary pavement markings and channelization devices on plan sheets. The Engineer shall coordinate with the State (and other Engineers as required) for overall temporary, interim, and final pavement marking strategies. The Engineer shall select Pavement markings from the latest State standards.

The Engineer shall provide the following information on sign/pavement marking layouts:

- Roadway layout.
- Center line with station numbering.
- Designation of arrow used on exit direction signs
- Culverts and other structures that present a hazard to traffic.
- Location of utilities.
- Existing signs to remain, to be removed, or to be relocated.
- Proposed signs (illustrated, numbered and size).
- Proposed overhead sign bridges to remain, to be revised, removed or relocated.
- Proposed overhead sign bridges, indicating location by plan.
- Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation.
- Quantities of existing pavement markings to be removed.
- Proposed delineators and object markers.
- The location of interchanges, mainlanes, grade separations, frontage roads and ramps.
- The number of lanes in each section of proposed highway and the location of changes in numbers of lanes.
- Right-of-way limits.
- Direction of traffic flow on all roadways.

162.3. Traffic Signals. Based upon the results of the Traffic Warrant Studies, the Engineer shall identify and prepare Traffic Signal Plans for all warranted traffic signals. The Engineer shall confirm the power source for all signals and coordinate with the appropriate utility agency. Traffic Signal Plans shall be signed and sealed by a Texas Registered Professional Engineer. The Engineer shall develop all quantities, general notes, specifications and incorporate the appropriate agency standards required to complete construction. Traffic signal poles, fixtures, signs, and lighting shall be designed per the Green Ribbon Report recommendations and standards.

The following information shall be provided in the Traffic Signal Plans:

1. Layout
    a. Estimate and quantity sheet
        (1) List of all bid items
        (2) Bid item quantities
        (3) Specification item number
        (4) Paid item description and unit of measure

b. Basis of estimate sheet (list of materials)

c. General notes and specification data.

d. Condition diagram

(1) Highway and intersection design features
(2) Roadside development
(3) Traffic control including illumination

e. Plan sheet(s)

(1) Existing traffic control that will remain (signs and markings)
(2) Existing utilities
(3) Proposed highway improvements
(4) Proposed installation
(5) Proposed additional traffic controls
(6) Proposed illumination attached to signal poles.
(7) Proposed power pole source

f. Notes for plan layout

g. Phase sequence diagram(s)

(1) Signal locations
(2) Signal indications
(3) Phase diagram
(4) Signal sequence table
(5) Flashing operation (normal and emergency)
(6) Preemption operation (when applicable)
(7) Contact responsible Agency to obtain interval timing, cycle length and offset

h. Construction detail sheets(s)

(1) Poles (State standard sheets)
(2) Detectors
(3) Pull Box and conduit layout
(4) Controller Foundation standard sheet
(5) Electrical chart

i. Marking details (when applicable)

j. Aerial or underground interconnect details (when applicable)

2. General Requirements

a. Contact local utility company

(1) Confirm power source

b. Prepare governing specifications and special provisions list

c. Prepare project estimate

d. Conduct traffic counts and prepare Traffic Signal Warrant Studies for all proposed and existing traffic signals at designated locations.

3. Summary of Quantities

a. Small signs tabulation

b. Large signs tabulation including all guide signs

4. Sign Detail Sheets

a. All signs except route markers

b. Design details for large guide signs

c. Dimensioning (letters, shields, borders, etc.)

d. Designation of shields attached to guide signs

MISCELLANEOUS (ROADWAY): FUNCTION CODE 163

The Engineer shall provide the following services:

163.1. Retaining Walls and Miscellaneous Structures. The Engineer shall develop each retaining wall design and determine the location of each soil boring needed for the foundation design of each retaining wall in accordance with the *Geotechnical Manual* and project geotechnical report, if provided. Prior to preparation of retaining wall layouts, the Engineer shall prepare a comparative cost analysis of different types of retaining walls versus roadway embankment, pavement, soil stabilization, retaining wall types, and available ROW to determine optimum selection based on economics, construction time duration, ROW encroachments (need for construction easements) and construction feasibility. The Engineer shall submit early in the plan preparation the retaining wall layouts to obtain approval from the State. The Engineer shall incorporate all necessary information from above referenced manuals and respective checklists into the retaining wall layouts. For stage construction, the Engineer shall indicate limits of existing retaining walls for removal and reconstruction, and determine limits of temporary retaining walls to be shown on the TCP.

The approximate limits of each retaining wall shall be based on Station or length. The Engineer shall notify the State the type of retaining walls that will be used for and Cut and Fill location. Retaining wall types shall include:

- Spread Footing Walls (High Footing Pressure Design and Low Footing Pressure Design). The Engineer shall select a spread footing wall for fill situation when considerable room behind the walls is available for forming, constructing, and backfilling the footings and stem. The Engineer shall notify the State when the quantity is less than 1000 SF to have as option in the plans to cast in place a spread footing wall design. This selection has to be approved to State.
- Mechanically Stabilized Earth (MSE) Walls. The Engineer shall prepare the retaining wall layouts showing plan and profile or retaining walls for design by a State approved vendor. The Engineer is responsible for design of geometry and wall stability. The Engineer shall incorporate a slope of 4:1 or flatter from the existing and finished ground line elevation to the face of the retaining wall.
- Concrete Block Walls (Structural and Landscape).
- Tied Back Walls.
- Soil Nailed Walls.
- Rock Nailed Walls.
- Drilled Shaft Walls.
- Temporary MSE Walls.

The Engineer shall provide layouts (scale 1"=100'), elevations, quantity estimate, summary of quantities, typical cross sections and structural details of all retaining walls within the project. Approximate lengths of the retaining walls as shown on the schematic are listed as below. The Engineer shall determine if any additional walls are required and verify the need for and length of the retaining walls as shown on the schematic.

If applicable, architectural standard drawings will be provided by the State and shall be incorporated into design details. The specific requirements for each item are as follows:

1. Layout Plan

   (a) Designation of reference line
   (b) Beginning and ending retaining wall stations
   (c) Offset from reference line
   (d) Horizontal curve data
   (e) Total length of wall
   (f) Indicate face of wall
   (g) All wall dimensions and alignment relations (alignment data as necessary)

(h) Soil boring locations
(i) Drainage, signing, lightning, etc. that is mounted on or passing through the wall.
(j) Subsurface drainage structures or utilities which could be impacted by wall construction.

2. Elevation:

(a) Top of wall elevations
(b) Existing and finished ground line elevations
(c) Vertical limits of measurement for payment
(d) Type, limits and anchorage details of railing (only if Traffic Railing foundation standard is not being used on this project)
(e) Top and bottom of wall profiles plotted at correct station & elevation.
(f) Underdrains
(g) Any soil improvement, if applicable.
(h) Drainage, signing, lighting etc. as noted above
(i) Drainage structures and utilities as noted above

3. Sectional View:

(a) Reinforced volume
(b) Underdrain location
(c) Soil improvements, if applicable.

4. General Guidelines for Retaining Walls

(a) The Engineer shall perform design calculations to check the external stability of the walls including slope stability, bearing, sliding and overturning and detail drawings in accordance with the standard requirements of the State.
(b) For retaining wall submittals, the Engineer shall look at State's Bridge Division website for current requirements.

163.2. Traffic Control Plan, Detours, Sequence of Construction. The Engineer shall prepare Traffic Control Plans (TCP) for the project. The Engineer is to complete Form 2229-Significant Project Procedures along with Page 4 of Form 1002, specifically titled Accelerated Construction Procedures. A detailed TCP shall be developed in accordance with the latest edition of the TMUTCD. The Engineer is to implement the current Barricade and Construction (BC) standards as applicable. The Engineer shall interface and coordinate phases of work, including the TCP, with adjacent Engineers.

1. The Engineer shall provide a written narrative of the construction sequencing and work activities per phase and determine the existing and proposed traffic control devices (regulatory signs, warning signs, guide signs, route markers, construction pavement markings, barricades, flag personnel, temporary traffic signals, etc.) to be used to handle traffic during each construction sequence. The Engineer shall show proposed traffic control devices at grade intersections during each construction phase (stop signs, flagperson, signals, etc.). The Engineer shall show temporary roadways, ramps, structures (including railroad shoo-fly) and detours required to maintain lane continuity throughout the construction phasing. If temporary retaining walls are required, show the limits on the applicable TCP.

2. Coordinate with the State in scheduling a Traffic Control Workshop and submittal of the TCP for approval by the Traffic Control Approval Team (TCAT). The Engineer shall assist the State in coordinating mitigation of impacts to adjacent schools, emergency vehicles, pedestrians, bicyclists and neighborhoods.

3. Develop each TCP to provide continuous, safe access to each adjacent property during all phases of construction and to preserve existing access. The Engineer shall notify the State in the event existing access must be eliminated, and must receive approval from the State prior to any elimination of existing access.

4. Design temporary drainage to replace existing drainage disturbed by construction activities or to drain detour pavement. The Engineer shall show horizontal and vertical location of culverts and required cross sectional area of culverts.

5. Prepare each TCP in coordination with the State. The TCP shall include interim signing for every phase of construction. Interim signing shall include regulatory, warning, construction, route, and guide signs. The Engineer shall interface and coordinate phases of work, including the TCP, with adjacent Engineers, which are responsible for the preparation of the PS&E for adjacent projects.

6. Maintain continuous access to abutting properties during all phases of the TCP. The Engineer shall develop a list of each abutting property along its alignment. The Engineer shall prepare exhibits for and attend meetings with the public, as requested by the State.

7. Make every effort to prevent detours and utility relocations from extending beyond the proposed Right-of-way lines. If it is necessary to obtain additional permanent or temporary easements and Right-of-Entry, the Engineer shall notify the State in writing of the need and justification for such action. The Engineer shall identify and coordinate with all utility companies for relocations required.

8. Describe the type of work to be performed for each phase of sequence of construction and any special instructions (e.g. storm sewer, culverts, bridges, railing, illumination, signals, retaining walls, signing, paving surface sequencing or concrete placement, ROW restrictions, utilities, etc.) that the contractor should be made aware to include limits of construction, obliteration, and shifting or detouring of traffic prior to the proceeding phase.

9. Include the work limits, the location of channelizing devices, positive barrier, location and direction of traffic, work area, stations, pavement markings, and other information deemed necessary for each phase of construction.

10. The Engineer shall identify and delineate any outstanding ROW parcels.

11. Delineate areas of wetlands on traffic control plans.

163.3. Temporary Traffic Signals and Illumination: If the Engineer determines that an existing traffic signal will be affected by the project, then the Engineer shall address the adjustment/realignment of traffic signal heads and the use of detection for mainlanes and side streets on the plans. The Engineer shall obtain traffic movement counts to address any new timing plans to minimize the impact during construction and to determine the storage length needed for left and right turn movements. The Engineer shall address lighting of signalized intersections, and shall coordinate with local utilities as approved by the State.

163.4. Illumination. The Engineer shall refer to TxDOT's *Highway Illumination Manual* and other deemed necessary State approved manuals for design of continuous lighting and safety lighting for all conventional, high-mast, and underpass lighting. The Engineer shall include safety lighting as part of each design on each flashing beacon and traffic signal. The Engineer shall provide a preliminary layout for initial review and approval by the State. The Engineer shall prepare circuit wiring diagrams showing the number of luminaries on each circuit, electrical conductors, length of runs, service pole assemblies. Underpass lighting shall be used on all structures within each project. The Engineer shall integrate existing illumination within the project limits into the proposed design. The Engineer shall coordinate with the State to determine the location of proposed high-mast, conventional, and underpass lighting.

163.5. Storm Water Pollution Prevention Plans (SW3P). The Engineer shall develop SW3P, on separate sheets from (but in conformance with) the TCP, to minimize potential impact to receiving waterways. The SW3P shall include text describing the plan, quantities, type, phase and locations of erosion control devices and any required permanent erosion control

163.6. Compute and Tabulate Quantities. The Engineer shall provide the summaries and quantities within all formal submittals.

163.7. Special Utility Details (Water, Sanitary Sewer, *etc.*) The Engineer shall develop special details to accommodate or adjust utilities. Prior to developing any special utility detail, the Engineer shall notify the State in writing regarding each utility conflict that may require an accommodation. As directed by the State the Engineer shall coordinate with each utility to develop each special detail. The Engineer shall develop each utility detail or accommodation in compliance with the State's *Utility Accommodation*

Rules. The Engineer shall prepare each plan sheet, detail sheet, special specification, special provision, and special note required to incorporate the details into the State's plans.

163.8. Miscellaneous Structural Details. The Engineer shall provide necessary details required to supplement standard details.

163.9. Agreements (Railroad, *etc.*) and Layouts. The Engineer shall prepare each railroad or other agency agreement, exhibit, and layout sheet in accordance with the requirements of each railroad and as directed by the State. The Engineer shall coordinate with each railroad or agency and the State to determine submittal requirements, processing schedules, and exhibit formats. The Engineer shall submit each exhibit to the State for review and processing.

163.10. Estimate. The Engineer shall independently develop and report quantities necessary to construct contract in standard State bid format at the specified milestones and Final PS&E submittals. The Engineer shall prepare each construction estimates using Estimator. The estimate shall be provided in DCIS format at the 95% and Final PS&E submittals.

163.11. Specifications and General Notes. The Engineer shall identify necessary standard specifications, special specifications, special provisions and the appropriate reference items. The Engineer shall prepare General Notes from the District's *Master List of General Notes*, Special Specifications and Special Provisions for inclusion in the plans and bidding documents. The Engineer shall provide General Notes, Special Specifications and Special Provisions in the required format.

CONTRACT MANAGEMENT AND ADMINISTRATION:

FUNCTION CODE 164: Managing Contracted PS&E Services (FC 110-170)

The ENGINEER shall:

a. Perform all work in accordance with the State's latest practices, criteria, specifications, policies, procedures and Standards of Uniformity (SOU). All documents shall be sufficient to satisfy the current SOUs available from the State.

b. Act as an agent for the State when specified in a work authorization.

c. Produce a complete and acceptable deliverable for each environmental service performed for environmental documentation.

d. Incorporate environmental data into identification of alternatives.

e. Notify the State of its schedule, in advance, for all field activities.

f. When specified, seek right of entry from public or private land owners to perform environmental services. Right of entry permission shall be written and signed by the land owner. Develop letters or other materials for seeking right of entry. Letters or other materials seeking right of entry shall not be distributed without prior approval of the State. Letters or other materials seeking right of entry shall contain explicit reference to the kinds of activities for which right of entry is requested and an indication of the impacts (if any) that will result from performance of environmental services.

g. Notify the State as soon as practical, by phone and in writing, if performance of environmental services discloses the presence or likely presence of significant impacts (in accord with 40 Code of Federal Regulations (CFR) 1500-1508). Inform the State of the basis for concluding that there are significant impacts and the basis for concluding that the impacts may require mitigation.

h. Notify the State as soon as practical, by phone and in writing, if performance of environmental services results in identification of impacts or a level of controversy that may elevate the Transportation Activity's status from a categorical exclusion or environmental assessment, and the State will reassess the appropriate level of documentation.

i. Provide progress reports at time intervals as defined in the Work Authorization. Progress reports will include:

- Activities during the reporting period.

- Activities planned for the following months.
- Project action item and project schedule maintenance.
- Overall status of project.

j. Develop and maintain a detailed project schedule to track project conformance to Exhibit C, Work Schedule, for each work authorization. The schedule submittals shall be hard copy and electronic format.

k. Meet on a scheduled basis with the State to review project progress.

l. Prepare, distribute, and file both written and electronic correspondence.

m. Document phone calls and conference calls as required during the project to coordinate the work for various team members.

n. Perform a quality control review of all work for compliance with the State's latest practices and procedure, policies, standards, specifications and design criteria. The Engineer shall submit a copy of the redline markups from the quality control review of the 60% and 90% PS&E submittal.

o. Prepare and execute contracts with sub consultants, monitor sub consultant activities (staff and schedule), and review and recommend approval of sub consultant invoices.

p. Attend progress meetings with officials from the State and provide a summary of meeting minutes. The purpose of these meetings is to evaluate the project status, determine necessary adjustments to the project work plan and schedule, and plan upcoming events and to discuss and resolve project technical issues. These meetings will include coordination and review meetings for the submittals as defined in the Work Authorization.

BRIDGE DESIGN: FUNCTION CODE 170

170.1. Bridge Layout. The Engineer shall prepare the bridge layout plan sheet. The Engineer shall determine the location of each soil boring needed for foundation design in accordance with the *Geotechnical Manual*.

Prior to preparation of each bridge layout, the Engineer shall prepare a comparative cost analysis of bridge structures to determine: (1) the optimum bridge beams for vertical clearance over railroads, roadway, or waterways, (2) the optimum bridge structure versus roadway embankment, pavement, soil stabilization, and retaining walls, and (3) to determine optimum in bridge beams for the direct connectors.

The Engineer shall conduct preliminary studies as necessary prior to producing the bridge layout. Preliminary studies will include the following:

1. Locate utilities. Determine the locations of utilities that affect placement of bridge substructure elements.
2. Determine extents of right of way.
3. If necessary, review existing documentation and information for rehabilitation, widening, or replacement of existing structures. Available information may include:
   - 3.1. Original plans and shop drawings.
   - 3.2. Existing specifications.
   - 3.3. Documentation of previous repairs.
   - 3.4. Routine Bridge Inspection Report.
   - 3.5. Inspection reports/condition surveys. Conduct additional inspections as required to fully determine extent of repairs, structural adequacy, and existing condition of structure. Coordinate with the State project manager to arrange any necessary inspections.
   - 3.6. Load rating reports.

3.7. Soil borings and pile driving record.

The Engineer shall submit each preliminary bridge layout to the State for approval prior to beginning structural detail design. The Engineer shall comply with all relevant sections of the latest edition of the State's LRFD Bridge Design Manual, Bridge Project Development Manual, Bridge Detailing Guide and respective checklists, and AASHTO LRFD Bridge Design Specifications. Each bridge layout sheet shall include bridge typical sections, structural dimensions, abutment and bent locations, superstructure and substructure types, and any pertinent information from the Bridge Detailing Guide bridge layout checklists. The Engineer shall locate and plot all soil borings and utilities, show proposed retaining walls, and, for staged construction, indicate limits of existing bridge for removal and reconstruction.

170.2. Bridge Detail Summary. The Engineer shall prepare bridge quantities, estimates and specifications in accordance to the above-listed manuals for each bridge replacement, bridge widening, bridge class culvert, and bridge rail retrofit.

170.3. Bridge Replacement, Bridge Widening, and Bridge Class Culvert Structural Details. The Engineer shall prepare each structural design and develop detailed structural drawings of all required details in compliance with above-listed manuals. Prepare any project-specific modified standards necessary for inclusion in the PS&E package. Sign, seal, and date all project-specific modified standards. Additionally, the Engineer shall perform the tasks specified in the work authorization.

If a bridge is determined to be widened, the Engineer shall provide an inventory and operating load rating of the existing structure. Load ratings of existing structures shall be in accordance with the TxDOT Bridge Inspection Manual and AASHTO's *Manual for Bridge Evaluation*. Load rating results shall be submitted in a Bridge Load Rating Report. Sign, seal, and date the Load Rating Report.

170.4. Bridge Standards Development: If indicated in the work authorization, the Engineer shall prepare each structural design and develop structural standard drawings of all required details in compliance with the above listed manuals.

170.5. Traffic Standards Development: If indicated in the work authorization, the Engineer shall prepare each design and develop traffic standard drawings of all required details in compliance with the above listed manuals.

170.6. Bridge Rail Retrofit Structural Details: The Engineer shall prepare each structural design and develop detailed structural drawings of all required details in compliance with the above listed manuals. The Engineer shall utilize TxDOT standard bridge details and rails to the greatest extent possible. Prepare any project-specific modified standards necessary for inclusion in the PS&E package. The Engineer shall sign, seal, and date all project-specific modified standards.

170.7. Load Rating of Bridge Projects: If indicated in the work authorization, the Engineer shall provide an inventory and operating rating of newly constructed structures. Both superstructure and substructure shall be load rated. Load ratings shall be in accordance with the TxDOT Bridge Inspection Manual and AASHTO's *Manual for Bridge Evaluation*. Each separate superstructure element constructed shall be rated. Load rating results shall be submitted in a Bridge Load Rating Report. Sign, seal, and date the Load Rating Report.

170.8. Seismic Analysis of Bridge Projects: If indicated in the work authorization, the Engineer shall perform seismic analysis of bridge structures. The bridge design notes shall indicate the seismic zone and checks performed to ensure that AASHTO criteria is met.

170.9. Bridge Repair Structural Details: The Engineer shall prepare each structural design, repair method, and develop detailed structural drawings of all required details in compliance with the above listed

manuals. Repair methods shall adhere to industry standards and provisions from applicable documents by material specific organizations and American Society for Testing and Materials. For repair to concrete structures, the repair shall be implemented in accordance with the methods outlined in the TxDOT Concrete Repair Manual. When developing repair or rehabilitation plans, the Engineer shall specifically include which sections of the TxDOT Concrete Repair Manual that will be enforced.

170.10. Bridge Rehabilitation Audit: If indicated in the work authorization, the Engineer shall conduct an audit of past TxDOT bridge rehabilitation projects. The work shall include reviewing condition survey reports, Historic Bridge Team documentation (as applicable), design documents, and the rehabilitation construction plan set. The Engineer shall submit a final report documenting all findings, including discrepancies between recommendations from the pre-design field work, construction plans, and what actually occurred at the bridge site. Sign, seal, and date the final report.

170.11. Bridge Specifications: Prepare any special provisions and special specifications necessary for inclusion in the PS&E package. Whenever possible, use the State's standard drawings, standard specifications, or previously approved special provisions and special specifications. Submit any specifications developed by the Engineer to the State for approval prior to inclusion in the PS&E package.

CONSTRUCTION PHASE SERVICES: FUNCTION CODE 309

The Engineer shall provide Construction Phase Services at the written request of the State's Project Manager. The written request shall include a description of the work requested, a mutually agreed upon time limit, and any special instructions for coordination and submittal. These services shall include, but are not limited to the following:

1. Attend preconstruction meeting
2. Attend partnering meeting
3. Attend field meetings and make visits to site
4. Calculate quantities and assist the area engineer in preparing change orders
5. Review and approval of shop drawings
6. Review and approval of forming details
7. Responding to requests for information (RFIs)
8. Providing minor redesign (major redesign should be handled with a contract supplement)
9. Answering general questions
10. Providing clarification
11. Other project related tasks in support of TxDOT during construction

Deliverables

Plans

The Engineer shall provide the following information at each submittal:

1. 30% Plans Submittal - Provide the State with a review set of plans of the items below in the format specified in the Work Authorization:
    - 1.1. Estimate of construction cost
    - 1.2. Engineer's internal QA/QC markup set
    - 1.3. Form 1002 and Design Exceptions with existing and proposed typical sections, location map and design exception exhibits
    - 1.4. Preliminary Title Sheet
    - 1.5. Existing and Proposed Typical Sections
    - 1.6. Preliminary Summary Sheets
    - 1.7. Control Data Sheets
    - 1.8. Preliminary Plan & Profile Sheets for all Alignments
    - 1.9. Preliminary Intersection Layouts
    - 1.10. Preliminary Grading Sheets
    - 1.11. Preliminary Drainage Area Maps
    - 1.12. Preliminary Culvert Computations
    - 1.13. Preliminary Culvert Layouts
    - 1.14. Preliminary Bridge Layouts
    - 1.15. Exhibit A Documents for Railroad Coordination
    - 1.16. Preliminary Intelligence Transportation Systems (ITS) Sheets
    - 1.17. Comprehensive Map of all Utilities within the Project Area

2. 60% Plans Submittal - Provide the State with a review set of plans of the items below in the format specified in the Work Authorization:
    - 2.1. Engineer's internal QA/QC marked up set.
    - 2.2. 1 set of a roll format TCP phasing layouts, 1 .pdf of plans sheets for TCP concept, and significant project procedures form (State Form 2229) to present at the DSRT for the State review.
    - 2.3. Address 30% Comments
    - 2.4. Updated Title Sheet with Index of Sheets including Standards
    - 2.5. Final Existing and Proposed Typical Sections
    - 2.6. Updated Summary Sheets
    - 2.7. Preliminary Traffic Control Plan Sheets
    - 2.8. Control Data Sheets & Right of Way Marker Sheets
    - 2.9. Final Plan & Profile Sheets for all Alignments
    - 2.10. Final Intersection Layouts
    - 2.11. Preliminary Traffic Signal Sheets
    - 2.12. Preliminary Illuminations Sheets
    - 2.13. Preliminary ITS Sheets
    - 2.14. Preliminary Miscellaneous Roadway Details
    - 2.15. Final Drainage Area Maps
    - 2.16. Final Culvert Computations
    - 2.17. Final Culvert Layouts
    - 2.18. Preliminary Storm Sewer Plan & Profile Sheets
    - 2.19. Preliminary Hydraulic Computations
    - 2.20. Soil Borings
    - 2.21. Preliminary Retaining Wall Layouts
    - 2.22. Approved Bridge Layouts
    - 2.23. Final Utility Exhibits
    - 2.24. Preliminary Signing Layouts

2.25. Preliminary Pavement Marking Layouts and Delineation
2.26. Preliminary SW3P Layouts
2.27. Preliminary Post Construction Sheets (TSS Control)
2.28. Roadway Cross-Sections (scale 1"=20' horizontally and vertically)
2.29. Updated Estimate
2.30. Preliminary Contract Time Determination

3. Review Submittal (90%) - Provide the State with a review set of plans of the items below in the format specified in the Work Authorization:

3.1. New Special Specifications and Special Provisions with Form 1814, if applicable.
3.2. Engineer's internal QA/QC marked up set.
3.3. Other supporting documents.
3.4. Address 60% Comments
3.5. Updated Title Sheet with Index of Sheets
3.6. Final Existing and Proposed Typical Sections
3.7. Final Summary Sheets
3.8. Final Traffic Control Plan Sheets
3.9. Final Control Data Sheets
3.10. Final Plan & Profile Sheets
3.11. Final Intersection Layouts
3.12. Final Traffic Signal Sheets
3.13. Final Illuminations Sheets
3.14. Final ITS Sheets
3.15. Final Miscellaneous Roadway Details
3.16. Final Drainage Area Maps
3.17. Final Culvert Computations
3.18. Final Culvert Layouts
3.19. Final Storm Sewer Plan & Profile Sheets Final Hydraulic Computations
3.20. Final Retaining Wall Layouts
3.21. Final Bridge Sheets
3.22. Final Signing Layouts
3.23. Final Pavement Marking Layouts and Delineation
3.24. Final SW3P Layouts
3.25. Final Post Construction Sheets (TSS Control)
3.26. Final Roadway Cross-Sections (scale 1"=20) if changed
3.27. Final construction cost Estimate, General Notes, Specification Data Sheet, Special Provisions, Special Specifications
3.28. Final Contract Time Determination

4. Final submittal (100%)

4.1. Final set of plans, in the format specified in the Work Authorization Revised supporting documents from 95% review comments.
4.2. Revised supporting documents from 90% review comments.

Electronic Copies

The Engineer shall furnish the State with a CD/DVD of the final plans in the current CADD system used by the STATE, .pdf format, and in the District's File Management System (FMS) format.

The Engineer shall also provide separate CD/DVD containing cross section information (in dgn, XLR & ASCII formats) for the contractor's use.

Primavera (P3) file or the latest scheduling program used by the State for construction time estimate.

Calculations

The Engineer shall provide the following information on a CD/DVD in digital copy (.PDF) format with:

- All quantity and non-structural design calculations.
- Engineering design calculations, load rating calculations, analysis, input calculations, quantities, geometric designs (GEOPAK GPK files), etc. relating to the project's structural elements. Project structural elements include, but are not limited to: bridges, retaining walls, overhead sign foundations, high-mast illumination foundations, non-standard culverts, custom headwalls and drainage appurtenances.
- Working copies of all spreadsheets and output from any programs utilized on a CD/DVD in a universally reliable format.

Submit element normally bound using a .pdf format.

Archiving File for Bridge Design Calculations and Notes:

1. The Engineer shall scan the design notes (or convert electronic files) and submit a single PDF file for each bridge. In the case of a single design done for twin structures, submit the same notes under two separate NBI numbers.
   1.1. Refer to *Figure 6: Guidance for Calculation Retention* in the Bridge Division's *Quality Control and Quality Assurance Guide* at http.//ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/qa_qc_guide.pdf for the design elements that are required and how to assemble the PDF file.
   1.2. Additionally, the file should contain:
      1.2.1. Completed Quality Control Cover Sheet from the *Quality Control and Quality Assurance Guide* at http.//ftp.dot.state.tx.us/pub/txdot-info/library/pubs/bus/bridge/qa_qc_guide.pdf The Engineer is allowed to use their own cover sheet if it is similar to the Quality Control Coversheet from the *Quality Control and Quality Assurance Guide.*
      1.2.2. Bridge layout at the time of the original design
      1.2.3. Load rating calculations
      1.2.4. Communication directly related to the included elements
   1.3. Do not include bridge geometry runs (BGS, Geomath, spreadsheets, etc.).
2. Name the file using the following naming convention:
   2.1. Design notes: NBI_DN_yyyy—mm, with yyy-mm being the year and month the PDF file is submitted (ex. 1234567890abcde_DN_2015-06)
   2.2. Change Orders: NBI_CO_yyyy—mm, with yyy-mm being the year and month the PDF file is submitted (ex. 1234567890abcde_CO_2015-06
3. Send the Archiving File PDF of bridge design notes to the TxDOT contract manager, who will submit to the TxDOT Bridge Management Group. The files will become part of the permanent bridge file in the TxDOT bridge inspection database management system.

ATTACHMENT D

D-1

WORK AUTHORIZATION NO. ____
CONTRACT FOR ENGINEERING SERVICES

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 5 of Engineering Contract No. _____ (the Contract) entered into by and between the State of Texas, acting by and through the Texas Department of Transportation (the State), and _____ (the Engineer).

PART I. The Engineer will perform engineering services generally described as _____ in accordance with the project description attached hereto and made a part of this Work Authorization. The responsibilities of the State and the Engineer as well as the work schedule are further detailed in exhibits A, B and C which are attached hereto and made a part of the Work Authorization.

PART II. The maximum amount payable under this Work Authorization is $_____ and the method of payment is _____ as set forth in Attachment E of the Contract. This amount is based upon fees set forth in Attachment E, Fee Schedule, of the Contract and the Engineer's estimated Work Authorization costs included in Exhibit D, Fee Schedule, which is attached and made a part of this Work Authorization.

PART III. Payment to the Engineer for the services established under this Work Authorization shall be made in accordance with Articles 3 thru 5 of the contract, and Attachment A, Article 1.

PART IV. This Work Authorization shall become effective on the date of final acceptance of the parties hereto and shall terminate on _____, unless extended by a supplemental Work Authorization as provided in Attachment A, Article 1.

The maximum contract time is the time needed to complete all work authorizations that will be issued in the first two years of the contract. All work authorizations must be issued within the initial two-year period, starting from the contract execution date.

PART V. This Work Authorization does not waive the parties' responsibilities and obligations provided under the Contract.

IN WITNESS WHEREOF, this Work Authorization is executed in duplicate counterparts and hereby accepted and acknowledged below.

THE ENGINEER	**THE STATE OF TEXAS**
_____ (Signature)	_____ (Signature)
_____ (Printed Name)	_____ (Printed Name)
_____ (Title)	_____ (Title)
_____ (Date)	_____ (Date)

LIST OF EXHIBITS

Exhibit A	Services to be provided by the State
Exhibit B	Services to be provided by the Engineer
Exhibit C	Work Schedule
Exhibit D	Fee Schedule/Budget
Exhibit H-2	Subprovider Monitoring System Commitment Agreement

ATTACHMENT D

D-2

SUPPLEMENTAL WORK AUTHORIZATION NO. ____
WORK AUTHORIZATION NO. ____
CONTRACT FOR ENGINEERING SERVICES

THIS SUPPLEMENTAL WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 5 Contract No. _____ hereinafter identified as the "Contract," entered into by and between the State of Texas, acting by and through the Texas Department of Transportation (the State), and _____ (the Engineer).

The following terms and conditions of Work Authorization No. ____ are hereby amended as follows:

This Supplemental Work Authorization shall become effective on the date of final execution of the parties hereto. All other terms and conditions of Work Authorization No. ____ not hereby amended are to remain in full force and effect.

IN WITNESS WHEREOF, this Supplemental Work Authorization is executed in duplicate counterparts and hereby accepted and acknowledged below.

THE ENGINEER	**THE STATE OF TEXAS**
_____ (Signature)	_____ (Signature)
_____ (Printed Name)	_____ (Printed Name)
_____ (Title)	_____ (Title)
_____ (Date)	_____ (Date)

ATTACHMENT E

FEE SCHEDULE
(Final Cost Proposal)

This attachment provides the basis of payment and fee schedule. **The basis of payment for this contract is indicated by an "X" in the applicable box.** The basis shall be supported by the Final Cost Proposal (FCP) shown below. If more than one basis of payment is used, each one must be supported by a separate FCP.

"X"	Basis	
X	Lump Sum	The lump sum shall be equal to the maximum amount payable. The lump sum includes all direct and indirect costs and fixed fee. The Engineer shall be paid pro rata based on the percentage of work completed. For payment the Engineer is not required to provide evidence of actual hours worked, travel, overhead rates or other evidence of cost.
X	Unit Cost	The unit cost(s) for each type of unit and number of units are shown in the FCP. The unit cost includes all direct and indirect costs and fixed fee. The Engineer shall be paid based on the type and number of units fully completed and the respective unit cost. For payment, the Engineer is not required to provide evidence of actual hours worked, travel, overhead rates or any other cost data. The FCP may include special items, such as equipment which are not included in the unit costs. Documentation of these special costs may be required. The maximum amount payable equals the total of all units times their respective unit cost plus any special direct items shown.
X	Specified Rate Basis	The specified rates for each type of labor are shown in the FCP below. The FCP may include special items, such as equipment which are not included in the specified rates. Payment shall be based on the actual hours worked multiplied by the specified rate for each type of labor plus other agreed to special direct cost items. The specified rate includes direct labor and indirect cost and fixed fee. The State may request documentation of reimbursable direct costs including hours worked. Documentation of special item costs may be required. The specified rate is not subject to audit.
____	Cost Plus Fixed Fee	Payment shall be based on direct and indirect costs incurred plus a pro rata share of the fixed fee based on the ratio of labor and overhead cost incurred to total estimated labor and overhead cost in the FCP or the percentage of work completed. The invoice must itemize labor rates, hours worked, other direct costs and indirect costs. The Engineer may be required to provide documentation of hours worked and any eligible direct costs claimed. The provisional overhead rate charged is subject to audit and adjustment to actual rates incurred. The FCP below shows the hourly rates for labor, other direct expenses including but not limited to travel and allowable materials, provisional overhead rate and the fixed fee. __A. Actual Cost Plus Fixed Fee - Actual wages are paid (no minimum, no maximum. This option does not apply to Indefinite Deliverable Contracts.) __B. Range of Cost Plus Fixed Fee – Actual wages must be within the allowable range shown on the Final Cost Proposal.

ATTACHMENT E – FEE SCHEDULE

Final Cost Proposal (FCP) Supporting Basis of Payment

* The **MAXIMUM AMOUNT PAYABLE** is $2,000,000.00

The maximum amount payable is based on the following data and calculations:

* Maximum amount payable must be negotiated for each work authorization.

LEGACY CONTRACT NO.	88-6IDP5100
ERP CONTRACT NO.	601CT00000000000000000000004682

ATTACHMENT E- FEE SCHEDULE

SPECIFIED RATE AND LUMP SUM PAYMENT BASIS

PRIME PROVIDER NAME: **Huitt-Zollars, Inc.**

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Senior Project Manager	20+	$68.00	$222.36
Project Manager	10 to 20	$65.00	$212.55
Senior Engineer	15+	$60.00	$196.20
Senior Structural Engineer	15+	$60.00	$196.20
Structural Engineer	5 to 15	$53.50	$174.94
Project Engineer	10 to 15	$48.00	$156.96
Design Engineer	5 to 10	$40.00	$130.80
Engineer-In-Training	1 to 5	$32.00	$104.64
Senior CADD Operator	15+	$31.50	$103.00
CADD Operator	5 to 15	$27.00	$88.29
Admin/Clerical		$21.00	$68.67
RPLS - Task Leader	10 to 15	$47.00	$153.69
Survey Tech	1 to 5	$27.50	$89.92
2 - Person Survey Crew (Includes GPS and Robotic Total Stations. Mileage not included.)		$46.50	$152.05
3 - Person Survey Crew (Includes GPS and Robotic Total Stations. Mileage not included.)		$57.50	$188.02
Senior Hydrologist	15+	$63.00	$206.01
Hydrologist	5 to 15	$50.00	$163.50
Senior Survey Tech	5+	$33.00	$107.91
INDIRECT COST RATE:	**194.59%**		
PROFIT RATE:	**11.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Specified Rate Payment Basis - Contract rates to be billed. Documentation of hours must be maintained and is subject to audit.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

LEGACY CONTRACT NO.	88-6IDP5100
ERP CONTRACT NO.	601CT00000000000000000000004682

ATTACHMENT E- FEE SCHEDULE

SPECIFIED RATE AND LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: **AIA Engineers, LTD**

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$66.00	$185.89
Senior Engineer	15+	$60.00	$168.99
Senior Structural Engineer	15+	$64.00	$180.25
Structural Engineer	5 to 15	$52.00	$146.45
Project Engineer	10 to 15	$48.00	$135.19
Design Engineer	5 to 10	$41.00	$115.47
Engineer-In-Training	1 to 5	$33.00	$92.94
Senior Engineer Tech	15+	$36.50	$102.80
Senior CADD Operator	15+	$31.00	$87.31
CADD Operator	5 to 15	$27.00	$76.04
Admin/Clerical		$22.00	$61.96
Senior Hydrologist	15+	$60.00	$168.99
Hydrologist	5 to 15	$48.00	$135.19
INDIRECT COST RATE:	**156.04%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Specified Rate Payment Basis - Contract rates to be billed. Documentation of hours must be maintained and is subject to audit.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

LEGACY CONTRACT NO.	88-6IDP5100
ERP CONTRACT NO.	601CT0000000000000000000004682

ATTACHMENT E- FEE SCHEDULE

SPECIFIED RATE AND LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: IEA, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$62.95	$184.59
Senior Engineer	15+	$58.00	$170.08
Senior Structural Engineer	15+	$66.00	$193.54
Structural Engineer	5 to 15	$52.00	$152.48
Project Engineer	10 to 15	$46.00	$134.89
Design Engineer	5 to 10	$40.00	$117.30
Engineer-In-Training	1 to 5	$30.75	$90.17
Senior Engineer Tech	15+	$37.00	$108.50
Engineer Tech	5 to 15	$28.85	$84.60
Junior Engineer Tech	1 to 5	$21.00	$61.58
Senior CADD Operator	15+	$28.65	$84.01
CADD Operator	5 to 15	$26.80	$78.59
Junior CADD Operator	1 to 5	$22.70	$66.57
Admin/Clerical	-	$22.00	$64.51
Senior Hydrologist	15+	$61.00	$178.88
Hydrologist	5 to 15	$50.00	$146.62
Accountant - Invoicing	5 to 10	$34.00	$99.70
INDIRECT COST RATE:	**166.58%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Specified Rate Payment Basis - Contract rates to be billed. Documentation of hours must be maintained and is subject to audit.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

LEGACY CONTRACT NO.	88-6IDP5100
ERP CONTRACT NO.	601CT00000000000000000000004682

ATTACHMENT E- FEE SCHEDULE

SPECIFIED RATE AND LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: **Lockwood, Andrews & Newnam, Inc.**

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$65.00	$185.68
Senior Engineer	15+	$60.00	$171.40
Senior Structural Engineer	15+	$64.00	$182.82
Structural Engineer	5 to 15	$54.00	$154.26
Project Engineer	10 to 15	$48.00	$137.12
Design Engineer	5 to 10	$40.00	$114.26
Engineer-In-Training	1 to 5	$32.00	$91.41
Senior Engineer Tech	15+	$37.00	$105.69
Engineer Tech	5 to 15	$30.00	$85.70
Admin/Clerical		$18.00	$51.42
Senior Hydrologist	15+	$62.00	$177.11
Hydrologist	5 to 15	$51.00	$145.69
INDIRECT COST RATE:	**159.69%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Specified Rate Payment Basis - Contract rates to be billed. Documentation of hours must be maintained and is subject to audit.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

LEGACY CONTRACT NO.	88-6IDP5100
ERP CONTRACT NO.	601CT00000000000000000000004682

ATTACHMENT E- FEE SCHEDULE

SPECIFIED RATE AND LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: **P.E. Structural Consultants, Inc.**

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$55.00	$156.21
Senior Engineer	15+	$50.00	$142.01
Senior Structural Engineer	15+	$60.00	$170.41
Project Engineer	10 to 15	$40.00	$113.61
Design Engineer	5 to 10	$35.50	$100.83
Engineer-In-Training	1 to 5	$30.00	$85.21
Senior Engineer Tech	15+	$35.00	$99.41
Engineer Tech	5 to 15	$29.50	$83.79
Junior Engineer Tech	1 to 5	$19.50	$55.38
Admin/Clerical		$18.00	$51.12
Senior Project Manager	25+	$67.00	$190.29
INDIRECT COST RATE:	**158.20%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Specified Rate Payment Basis - Contract rates to be billed. Documentation of hours must be maintained and is subject to audit.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

LEGACY CONTRACT NO.	88-6IDP5100
ERP CONTRACT NO.	601CT00000000000000000000004682

ATTACHMENT E- FEE SCHEDULE

SPECIFIED RATE AND LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: **Terracon Consultants, Inc.**

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$65.00	$206.89
Senior Engineer	15+	$55.00	$175.06
Project Engineer	10 to 15	$44.90	$142.91
Design Engineer	5 to 10	$38.50	$122.54
Engineer-In-Training	1 to 5	$31.50	$100.26
Senior Engineer Tech	15+	$32.00	$101.85
Engineer Tech	5 to 15	$26.50	$84.35
Junior Engineer Tech	1 to 5	$18.00	$57.29
Senior CADD Operator	15+	$27.00	$85.94
CADD Operator	5 to 15	$23.25	$74.00
Junior CADD Operator	1 to 5	$18.00	$57.29
Geologist	5 to 15	$32.00	$101.85
Junior Geologist	1 to 5	$28.00	$89.12
INDIRECT COST RATE:	**189.36%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Specified Rate Payment Basis - Contract rates to be billed. Documentation of hours must be maintained and is subject to audit.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ERP CONTRACT NO.	601CT00000000000000000000004682		
ATTACHMENT E- FEE SCHEDULE			
OTHER DIRECT EXPENSES			
RATES SHOWN APPLY TO PRIME PROVIDER AND ALL SUBPROVIDERS			
SERVICES TO BE PROVIDED	**UNIT**	**FIXED COST**	**MAXIMUM COST**
Lodging/Hotel (Taxes/fees not included)	day/person		Current State
Lodging/Hotel - Taxes and Fees	day/person		$40.00
Meals (Excluding alcohol & tips) (Overnight stay required)	day/person		Current State
Mileage	mile	Current State	
Rental Car (Includes taxes and fees; Insurance costs will not be reimbursed)	day		$65.00
SUV or ATV Rental (Includes taxes and fees; Insurance costs will not be reimbursed)	day		$100.00
Rental Car Fuel	gallon		$3.75
Air Travel (Use with Indefinite Deliverable Contracts)	Rd Trip/person		Coach
Air Travel - In State - Short Notice (Coach)	Rd Trip/person		$400.00
Air Travel - In State - 2+ Wks Notice (Coach)	Rd Trip/person		$320.00
Air Travel - Out of State - Short Notice (Coach)	Rd Trip/person		$750.00
Air Travel - Out of State - 2+ Wks Notice (Coach)	Rd Trip/person		$600.00
Taxi/Cab fare	each/person		$25.00
Parking	day		$25.00
Toll Charges	each		$4.00
Standard Postage	letter	Current Postal	
Certified Letter Return Receipt	each	Current Postal	
Overnight Mail - letter size	each		$25.00
Overnight Mail - oversized box	each		$30.00
Courier Services	each		$25.00
Photocopies B/W (8 1/2" X 11")	each	$0.10	
Photocopies B/W (11" X 17")	each	$0.20	
Photocopies Color (8 1/2" X 11")	each	$0.40	
Photocopies Color (11" X 17")	each	$0.75	
Digital Ortho Plotting	sheet	$1.25	
Plots (B/W on Bond)	square foot	$0.50	
Plots (Color on Bond)	square foot	$1.00	
Plots (Color on Photographic Paper)	square foot	$4.00	
Color Graphics on Foam Board	square foot	$4.00	
Presentation Boards 30" X 40" Color Mounted	each		$80.00
Report Printing	each		$35.00
Report Binding and Tabbing	each		$4.25
Notebooks	each		$5.00
Reproduction of CD/DVD	each		$3.00
CDs	each		$1.00
4" X 6" Digital Color Print	picture		$0.25
Railroad - Flagger (Service provided by RR)	Hour		$100.00
Railroad - Insurance in addition to STD Minimum Required (Minimum coverage of $1 Million required by RR.)	each		$500.00

ERP CONTRACT NO.	601CT0000000000000000000004682		
ATTACHMENT E- FEE SCHEDULE			
OTHER DIRECT EXPENSES			
RATES SHOWN APPLY TO PRIME PROVIDER AND ALL SUBPROVIDERS			
SERVICES TO BE PROVIDED	**UNIT**	**FIXED COST**	**MAXIMUM COST**
Railroad - Permit	each		$1,500.00
Traffic Control Services, Arrow Boards and Attenuator trucks - Small Project (Includes labor, equipment and fuel)	day		$1,000.00
Traffic Control Services, Arrow Boards and Attenuator trucks - Medium Project (Includes labor, equipment and fuel)	day		$1,375.00
Traffic Control Services, Arrow Boards and Attenuator trucks - Large Project (Includes labor, equipment and fuel)	day		$2,000.00
Attenuator trucks - (Lane/Shoulder Closure) (Includes labor, equipment and fuel)	day		$400.00
Attenuator trucks - (No Lane Closure) (Includes labor, equipment and fuel)	day		$400.00
Flashing Arrow Board	day		$400.00
Portable Message Board	day		$200.00
Law Enforcement/Uniform Officer (including vehicle)	hour		$125.00
Boat with Motor	day		$200.00
Backhoe Rental	day		$875.00
GPS Receiver (rates applied to actual time GPS units are in use)	hour		$22.50
GPS RTK (rates applied to actual time GPS units are in use)	hour		$20.00
GPS Static (rates applied to actual time GPS units are in use)	hour		$20.00
Map Records	sheet		$20.00
Deed Copies	sheet		$1.75
Certified Deed Copies	sheet		$2.50
Historical Aerial Images	unit		$100.00
Aerial Photographs (1" = 500' scale)	each		$50.00
Type II ROW Monument - Excavated/Drilled, rocks, rocky soil. 2-4 inch depth (Includes crew time, equipment, materials, rentals, & labor.) Brass Marker supplied by TxDOT.	each		$55.00
Type II ROW Monument - Poured 2-3 Feet (Includes One Call, crew time, equipment, materials, rentals, labor.) Brass Marker supplied by TxDOT.	each		$150.00
Reprographics	per sq ft		$3.00
Terrestrial Laser Scanner (rates applied to actual time scanner unit is in use)	Hour		$105.00
Ground Target (includes paint, panel material, etc.)	Each		$18.00
Helicopter Equipment LiDAR -Transit Miles (including turn, maneuver miles and local airport to project)	per mile		$15.00
Helicopter Equipment LiDAR -Project Flight Miles (On project flight miles)	per mile		$55.00
Fixed Wing Airborne LiDAR- Transit Miles (including turn, maneuver miles and local airport to project)	per mile		$15.00
Fixed Wing Airborne LiDAR- Project Flight Miles (On project flight miles)	per mile		$25.00

ERP CONTRACT NO.	601CT0000000000000000000004682

ATTACHMENT E- FEE SCHEDULE

OTHER DIRECT EXPENSES

RATES SHOWN APPLY TO PRIME PROVIDER AND ALL SUBPROVIDERS

SERVICES TO BE PROVIDED	UNIT	FIXED COST	MAXIMUM COST
Aerial Photography- Transit miles (including turn, maneuver miles and local airport to project)	per mile		$8.00
Aerial Photography- Project Flight Miles (On project flight miles)	per mile		$28.00
Aerial Photography- Airborne GPS/IMU Data collection/Processing	per project		$2,000.00
Photo Lab Service- Black and White Processing (film, development, scanning)	per frame		$18.00
Photo Lab Service- Color Processing (film, development, scanning)	per frame		$25.00
Photo Lab Service- Color Infrared Processing (film, development, scanning)	per frame		$20.00
Photo Lab Service- Digital image processing	Per Frame		$5.00
Photo Lab Service- Enlargements, Lamination, Mounting	per sq ft		$5.00

Profit not allowed on Other Direct Expenses.

For Cost Plus Fixed Fee, Specified Rate, and Unit Cost - Fixed cost items to be billed at the fixed cost rate. Documentation, such as a usage log, must be maintained for audit purposes, and may be required to be submitted as a basis for reimbursement. For items with a maximum cost, actual cost to be billed not to exceed the maximum shown. Itemized receipts must be maintained for audit purposes, and may be required to be submitted as a basis for reimbursement. **For Lump Sum -** No documentation required. Invoicing by physical percent complete includes combination of direct labor and other direct expenses.

NOTE: For Cost Plus Fixed Fee, Specified Rate, and Unit Cost - Miscellaneous other direct expenses up to $100 per unit will be reimbursed at cost if approved and documented in advance by the State's Project Manager. Miscellaneous other direct expenses of $100 per unit or more will not be reimbursed unless a supplemental agreement to the contract and work authorization (if WAs are used) has been executed in advance authorizing the miscellaneous other direct expenses. No more than $2,500 in miscellaneous other direct expenses may be approved by the State's Project Manager over the life of this contract including prime provider and subproviders. **For Lump Sum -** This statement does not apply.

LEGACY CONTRACT NO.	88-6IDP5100
ERP CONTRACT NO.	601CT0000000000000000000004682

ATTACHMENT E- FEE SCHEDULE

UNIT COST PAYMENT BASIS

RATES SHOWN APPLY TO PRIME PROVIDER AND ALL SUBPROVIDERS

SERVICES TO BE PROVIDED	Test Code/Method	UNIT	COST
Volumetric Shrinkage	ASTM 427	each	$80.00
Unconfined Compressive Strength (Soil)	ASTM D2166	each	$50.00
Hydraulic Conductivity Permeability	ASTM D2434	each	$325.00
One Dimensional Consolidation Properties of Soil	ASTM D2435	each	$325.00
Unconfined Compressive Strength (Rock)	ASTM D2938	each	$65.00
Direct Shear Test of Soils Under Consolidated Drained Conditions	ASTM D3080	set of 3	$1,000.00
Splitting Tensile of Intact Rock Core	ASTM D3967	each	$50.00
Water Stand Pipes (Includes material & installation)	ASTM D4043	L.F.	$28.00
Calcium Carbonate Content of Soils	ASTM D4373	each	$55.00
Hydraulic Conductivity Permeability	ASTM D4511	each	$325.00
One Dimensional Swell, Methods A & B	ASTM D4546	each	$115.00
One Dimensional Swell, Method C	ASTM D4546	each	$300.00
Permeability of Silt and Clays	ASTM D5084	each	$350.00
Hydraulic Conductivity in Vadose Zone (Percolation)	ASTM D5126	each	$325.00
Miscellaneous Testing		hour	$75.00
Vertical Inclinometer		each	$30.00
Vertical Inclinometer Installation		each	$500.00
Vibrating Wire Piezometer		each	$725.00
Vibrating Wire Piezometer Installation		each	$900.00
Determination of Moisture Content in Soils	TEX-103-E	each	$8.00
Determination of Soil Constants Including:			
Liquid Limit of Soils (LL)	TEX-104-E	each	$40.00
Plasticity Index (PI)	TEX-106-E	each	$40.00
Plastic Limit of Soils (PL)	TEX-105-E	each	$40.00
Bar Linear Shrinkage for Soils	TEX-107-E	each	$25.00
Determining the Specific Gravity of Soils	TEX-108-E	per test	$42.50
Determination of Particle Size Analysis of Soils Text (Part I) - Retained +40	TEX-110-E	each	$45.00
Determination of Particle Size Analysis of Soils Text (Part II) - Hyrometer Analysis	TEX-110-E	each	$115.00
Amount of Minus No. 200 Sieve Material of Soils	TEX-111-E	each	$35.00
Admixing Lime to Reduce PI of Soils	TEX-112-E	per series	$200.00
Laboratory Compaction Characteristics and Moisture-Density Relationship of Base Materials Includes: Liquid Limit and Plastic Limit	TEX-113-E	per test	$195.00
Laboratory Compaction Characteristics and Moisture-Density Relationship of Subgrade, Embankment Soils, and Backfill Material (Part I)	TEX-114-E	per test	$150.00
Laboratory Compaction Characteristics and Moisture-Density Relationship of Subgrade, Embankment Soils, and Backfill Material (Part II)	TEX-114-E	per test	$150.00
Laboratory Compaction Characteristics and Moisture-Density Relationship of Subgrade, Embankment Soils, and Backfill Material (Part III)	TEX-114-E	per test	$150.00
Ball Mill method for Determining the Disintegration of Flexible Base Material	TEX-116-E	per test	$150.00
Triaxial Compression for Disturbed Soils and Base Materials (Part I) Incudes: LL,PL, Gradation, and MD Curve	TEX-117-E	per test	$1,100.00

ERP CONTRACT NO.	601CT0000000000000000000004682

ATTACHMENT E- FEE SCHEDULE

UNIT COST PAYMENT BASIS

RATES SHOWN APPLY TO PRIME PROVIDER AND ALL SUBPROVIDERS

SERVICES TO BE PROVIDED	Test Code/Method	UNIT	COST
Triaxial Compression for Disturbed Soils and Base Materials (Part II) Incudes: LL,PL, Gradation, and MD Curve	TEX-117-E	per test	$1,100.00
Triaxial Compression Test for Undisturbed Soils (UU) or ASTM D2850	TEX-118-E	per test	$115.00
Soil-Cement Testing (Part I) (Includes Tex-113-E)	TEX-120-E	per series	$250.00
Soil-Cement Compressive Strength, (Part II)	TEX-120-E	per test	$175.00
Soil-Lime Testing (Part I) (Includes Tex-113-E)	TEX-121-E	per series	$375.00
Soil-Lime Compressive Strength, (Part II)	TEX-121-E	per test	$125.00
Potential Vertical Rise	TEX-124-E	each	$35.00
Soil pH	TEX-128-E	each	$20.00
Method of Test for the Resistivity of Soils Material	TEX-129-E	each	$50.00
Consolidated Undrained Triaxial Compression Test for Undisturbed Soils(CU) or ASTM D4767 (single-stage) (includes moisture, PI, -200 and unit weight)/each	TEX-131-E	per test	$350.00
Consolidated Undrained Triaxial Compression Test for Undisturbed Soils (CU) or ASTM D4767 (multi-stage) (includes moisture, PI, -200 and unit weight)/each	TEX-131-E	per test	$1,000.00
Sulfate Determination in Soils	TEX-145-E	each	$35.00
Chloride or sulfate Determination/Each	TEX-620-J	per test	$45.00
Geotechnical Field Testing			
Soil Boring with SPT	ASTM D1586	L.F.	$22.00
Soil Boring/Rock Coring with TCP (< 60 ft.)	Tex-132-E	L.F.	$32.00
Soil Boring/Rock Coring with TCP (> 60 ft.)	Tex-132-E	L.F.	$35.00
Soil Boring/Rock Coring without TCP (< 60 ft.)		L.F.	$25.00
Soil Boring /Rock Coring without TCP (> 60 ft.)		L.F.	$20.00
Soil Boring without TCP (< 60 ft.):			
(a) Utlizing Continuous Sampler	ASTM D1587	L.F.	$18.00
(b) Shelby Push Tubes Extruded in Field	ASTM D1587	L.F.	$22.50
(c) Augering		L.F.	$15.00
Soil Boring without TCP (> 60 ft.):			
(a) Utlizing Continuous Sampler	ASTM D1587	L.F.	$25.00
(b) Shelby Push Tubes Extruded in Field	ASTM D1587	L.F.	$25.00
Soil Boring /Rock Coring using ATV with TCP (< 60 ft.)	TEX-132-E	L.F.	$38.00
Soil Boring /Rock Coring using ATV with TCP (> 60 ft.)	TEX-132-E	L.F.	$41.00
Soil Boring /Rock Coring using ATV without TCP/LF(< 60 ft)	TEX-132-E	L.F.	$36.00
Soil Boring /Rock Coring using ATV without TCP/LF(> 60 ft)	TEX-132-E	L.F.	$38.00
Securing In-Place Cores			
Core/drill operator/technician and coring equipment used to drill Flexiable and rigid pavment (2-man crew)		Trip	$150.00
(a) 4-in. diameter cores		Inch	$8.00
(b) 6-in. diameter cores		Inch	$10.00
Mobilization and Demobilization Truck Mounted Rig Mileage		mile	$4.50
Mobilization and Demobilization Marsh Buggy Mounted Rig Mileage		mile	$6.50

The unit costs shown include labor, overhead, and profit. Payment based on units completed. No partial payments.

All unit costs are negotiated costs and are not subject to change or adjustment.

ERP CONTRACT NO.	601CT00000000000000000000004682		
ATTACHMENT E- FEE SCHEDULE			
UNIT COST PAYMENT BASIS			
RATES SHOWN APPLY TO PRIME PROVIDER AND ALL SUBPROVIDERS			
SERVICES TO BE PROVIDED	**Test Code/Method**	**UNIT**	**COST**
Unit Cost Payment Basis: If unit costs by year are included, unit costs billed should correspond to the fiscal or calendar year, if applicable, in which the work was done. **Note:** Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.			

ATTACHMENT F

Not Applicable

ATTACHMENT G

Computer Graphics Files for Document and Information Exchange

ATTACHMENT H-FG

Disadvantaged Business Enterprise (DBE) for Federal-Aid Professional or Technical Services Contracts

1) **PURPOSE.** The purpose of this attachment is to carry out the U.S. Department of Transportation's (DOT) policy of ensuring nondiscrimination in the award and administration of DOT assisted contracts and creating a level playing field on which firms owned and controlled by minority or socially and economically disadvantaged individuals can compete fairly for DOT assisted contracts.
2) **POLICY.** It is the policy of the DOT and the Texas Department of Transportation (henceforth the "Department") that Disadvantaged Business Enterprises (DBEs) as defined in 49 CFR Part 26, Subpart A and the Department's Disadvantaged Business Enterprise Program, shall have the opportunity to participate in the performance of contracts financed in whole or in part with Federal funds. Consequently, the Disadvantaged Business Enterprise requirements of 49 CFR Part 26, and the Department's Disadvantaged Business Enterprise Program, apply to this contract as follows.
   a. The Provider will offer Disadvantaged Business Enterprises, as defined in 49 CFR Part 26, Subpart A and the Department's Disadvantaged Business Enterprise Program, the opportunity to compete fairly for contracts and subcontracts financed in whole or in part with Federal funds. In this regard, the Provider shall make a good faith effort to meet the Disadvantaged Business Enterprise goal for this contract.
   b. The Provider and any subprovider(s) shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Provider shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. The requirements of this Special Provision shall be physically included in any subcontract.
   c. When submitting the contract for execution by the Department, the Provider must complete and furnish Exhibit H-1 which lists the commitments made to certified DBE subprovider(s) that are to meet the contract goal and Exhibit H-2 which is a commitment agreement(s) containing the original signatures of the Provider and the proposed DBE(s). For Work Authorization Contracts, Exhibit H-1 is required at the time of submitting the contract for execution by the Department. Exhibit H-2 will be required to be completed and attached with each work authorization number that is submitted for execution, if the DBE will be performing work. Any substitutions or changes to the DBE subcontract amount shall be subject to prior written approval by the Department. If non-DBE subprovider is performing work, insert N/A (not applicable) on the line provided.
   d. Failure to carry out the requirements set forth above shall constitute a material breach of this contract and may result; in termination of the contract by the Department; in a deduction of the amount of DBE goal not accomplished by DBEs from the money due or to become due to the Provider, not as a penalty but as liquidated damages to the Department; or such other remedy or remedies as the Department deems appropriate.
3) **DEFINITIONS.**
   a. "Department" means the Texas Department of Transportation (TxDOT).
   b. "Federal-Aid Contract" is any contract between the Texas Department of Transportation and a Provider which is paid for in whole or in part with U. S. Department of Transportation (DOT) financial assistance.
   c. "Provider" is any individual or company that provides professional or technical services.
   d. "DBE Joint Venture" means an association a DBE firm and one (1) or more other firm(s) to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks and profits of the joint venture are commensurate with its ownership interest.
   e. "Disadvantaged Business Enterprise (DBE)" means a firm certified as such by the Department in accordance with 49 CFR Part 26.
   f. "Good Faith Effort" means efforts to achieve a DBE goal or other requirement of this Special Provision which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.
   g. "Race-neutral DBE Participation" means any participation by a DBE through customary competitive procurement procedures.

4) **PERCENTAGE GOAL.** The goal for Disadvantaged Business Enterprise (DBE) participation in the work to be performed under this contract is __11.7__ % of the contract amount.

5) **PROVIDER'S RESPONSIBILITIES.** A DBE prime may receive credit toward the DBE goal for work performed by his-her own forces and work subcontracted to DBEs. A DBE prime must make a good faith effort to meet the goals. In the event a DBE prime subcontracts to a non-DBE, that information must be reported to the Department.

   a. A Provider who cannot meet the contract goal, in whole or in part, shall document the "Good Faith Efforts" taken to obtain DBE participation. The following is a list of the types of actions that may be considered as good faith efforts. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

      (1) Soliciting through all reasonable and available means the interest of all certified DBEs who have the capability to perform the work of the contract. The solicitation must be done within sufficient time to allow the DBEs to respond to it. Appropriate steps must be taken to follow up initial solicitations to determine, with certainty, if the DBEs are interested.

      (2) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Provider might otherwise prefer to perform the work items with its own forces.

      (3) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

      (4) Negotiating in good faith with interested DBEs by making a portion of the work available to DBE subproviders and suppliers and selecting those portions of the work or material needs consistent with the available DBE subproviders and suppliers.

      (5) The ability or desire of the Provider to perform the work of a contract with its own organization does not relieve the Provider's responsibility to make a good faith effort. Additional costs involved in finding and using DBEs is not in itself sufficient reason for a Provider's failure to meet the contract DBE goal, as long as such costs are reasonable. Providers are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

      (6) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities.

      (7) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Provider.

      (8) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services.

      (9) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

      (10) If the Department's Director of the Business Opportunity Programs Office determines that the Provider has failed to meet the good faith effort requirements, the Provider will be given an opportunity for reconsideration by the Director of the appropriate Division.

NOTE: The Provider must not cause or allow subproviders to bid their services.

   b. The preceding information shall be submitted directly to the Chair of the Consultant Selection Team responsible for the project.

   c. The Provider shall make all reasonable efforts to honor commitments to DBE subproviders named in the commitment submitted under Section 2.c. of this attachment. Where the Provider terminates or removes a DBE subprovider named in the initial commitment, the Provider must demonstrate on a case-by-case basis to the satisfaction of the department that the originally designated DBE was not able or willing to perform.

   d. The Provider shall make a good faith effort to replace a DBE subprovider that is unable or unwilling to perform successfully with another DBE, to the extent needed to meet the contract goal. The Provider shall submit a completed Exhibit H-2 Form for the substitute firm(s). Any substitution of DBEs shall be subject to prior written approval by the Department. The Department may request a statement from the firm being replaced concerning its replacement prior to approving the substitution.

e. The Provider shall designate a DBE liaison officer who will administer the DBE program and who will be responsible for maintenance of records of efforts and contacts made to subcontract with DBEs.
f. Providers are encouraged to investigate the services offered by banks owned and controlled by disadvantaged individuals and to make use of these banks where feasible.

6) **ELIGIBILITY OF DBEs.**
a. The Department certifies the eligibility of DBEs, DBE joint ventures and DBE truck-owner operators to perform DBE subcontract work on DOT financially assisted contracts.
b. This certification will be accomplished through the use of the appropriate certification schedule contained in this Department's DBE program.
c. The Department publishes a Directory of Disadvantaged Business Enterprises containing the names of firms that have been certified to be eligible to participate as DBEs on DOT financially assisted contracts. The directory is available from the Department's Business Opportunity Programs Office. The Texas Unified Certification Program DBE Directory can be found on the Internet at: http://www.dot.state.tx.us/services/business_opportunity_programs/tucp_dbe_directory.htm .
d. Only DBE firms certified at the time the contract is signed or at the time the commitments are submitted are eligible to be used in the information furnished by the Provider as required under Section 2.c. and 5.d. above. For purposes of the DBE goal on this contract, DBEs will only be allowed to perform work in the categories of work for which they were certified.

7) **DETERMINATION OF DBE PARTICIPATION.**
A firm must be an eligible DBE and perform a professional or technical function relating to the project. Once a firm is determined to be an eligible DBE, the total amount paid to the DBE for work performed with his/her own forces is counted toward the DBE goal. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subprovider is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.

A DBE subprovider may subcontract no more than 70% of a federal aid contract. The DBE subprovider shall perform not less than 30% of the value of the contract work with assistance of employees employed and paid directly by the DBE; and equipment owned or rented directly by the DBE. DBE subproviders must perform a commercially useful function required in the contract in order for payments to be credited toward meeting the contract goal. A DBE performs a commercially useful function when it is responsible for executing the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. When a DBE is presumed not to be performing a commercially useful function, the DBE may present evidence to rebut this presumption.

A Provider may count toward its DBE goal a portion of the total value of the contract amount paid to a DBE joint venture equal to the distinct, clearly defined portion of the work of the contract performed by the DBE.

Proof of payment, such as copies of canceled checks, properly identifying the Department's contract number or project number may be required to substantiate the payment, as deemed necessary by the Department.

8) **RECORDS AND REPORTS.**
a. After submission of the initial commitment reported (Exhibit H-1), required by Section 2.c. of this attachment, the Provider shall submit Monthly Progress Assessment Reports (Exhibit H-3), after contract work begins, on DBE involvement to meet the goal and for race-neutral participation. One copy of each report is to be sent to the Department's Business Opportunity Programs Office monthly, in addition one copy is to be submitted with the Provider's invoice. **Only actual payments made to subproviders are to be reported.** These reports will be required until all subprovider activity is completed. The Department may verify the amounts being reported as paid to DBEs by requesting copies of canceled checks paid to DBEs on a random basis.
b. DBE subproviders should be identified on the report by name, type of work being performed, the amount of actual payment made to each during the billing period, cumulative payment amount and percentage of the

total contract amount. These reports will be due within fifteen (15) days after the end of a calendar month. Reports are required even when no DBE activity has occurred in a billing period.

c. All such records must be retained for a period of seven (7) years following final payment or until any investigation, audit, examination, or other review undertaken during the seven (7) years is completed, and shall be available at reasonable times and places for inspection by authorized representatives of the Department or the DOT.

d. Prior to receiving final payment, the Provider shall submit a Final Report (Exhibit H-4), detailing the DBE payments. The Final Report is to be sent to the Department's Business Opportunity Programs Office and one (1) copy to be submitted with the Provider's final invoice. If the DBE goal requirement is not met, documentation of the good faith efforts made to meet the goal must be submitted with the Final Report.

9) **COMPLIANCE OF PROVIDER.** To ensure that DBE requirements of this DOT-assisted contract are complied with, the Department will monitor the Provider's efforts to involve DBEs during the performance of this contract. This will be accomplished by a review of Monthly Progress Assessment Reports (Exhibit H-3), submitted to the Department's Business Opportunity Programs Office by the Provider indicating his progress in achieving the DBE contract goal, and by compliance reviews conducted by the Department. The Monthly Progress Assessment Report (Exhibit H-3) must be submitted at a minimum monthly to the Business Opportunity Programs Office, in addition to with each invoice to the appropriate agency contact.

The Provider shall receive credit toward the DBE goal based on actual payments to the DBE subproviders with the following exceptions and only if the arrangement is consistent with standard industry practice. The Provider shall contact the Department if he/she withholds or reduces payment to any DBE subprovider.

(1) A DBE firm is paid but does not assume contractual responsibility for performing the service;
(2) A DBE firm does not perform a commercially useful function;
(3) Payment is made to a DBE that cannot be linked by an invoice or canceled check to the contract under which credit is claimed;
(4) Payment is made to a broker or a firm with a brokering-type operation;
(5) Partial credit is allowed, in the amount of the fee or commission provided the fee or commission does not exceed that customarily allowed for similar services, for a bona fide service, such as professional, technical, consultant, or managerial services, and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for performance of the contract.

A Provider's failure to comply with the requirements of this Special Provision shall constitute a material breach of this contract. In such a case, the Department reserves the right to terminate the contract; to deduct the amount of DBE goal not accomplished by DBEs from the money due or to become due the Provider, not as a penalty but as liquidated damages to the Department; or such other remedy or remedies as the Department deems appropriate.

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ATTACHMENT H-FN

Disadvantaged Business Enterprise (DBE) for Race-Neutral Professional or Technical Services Contracts

It is the policy of the U. S. Department of Transportation (DOT) that DBEs as defined in 49 CFR Part 26, Subpart A, be given the opportunity to compete fairly for contracts and subcontracts financed in whole or in part with Federal funds and that a maximum feasible portion of the Department's overall DBE goal be met using race-neutral means. Consequently, if there is no DBE goal, the DBE requirements of 49 CFR Part 26, apply to this contract as follows:

The Provider will offer DBEs as defined in 49 CFR Part 26, Subpart A, the opportunity to compete fairly for contracts and subcontracts financed in whole or in part with federal funds. Race-Neutral DBE participation on projects with no DBE goal should be reported on the Exhibit H-3 Form. Payments to DBEs reported on Exhibit H-3 are subject to the following requirements:

DETERMINATION OF DBE PARTICIPATION.

A firm must be an eligible DBE and perform a professional or technical function relating to the project. Once a firm is determined to be an eligible DBE, the total amount paid to the DBE for work performed with his/her own forces must be reported as race-neutral DBE participation. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work should not be reported unless the subcontractor is itself a DBE.

A DBE subprovider may subcontract no more than 70% of a federal aid contract. The DBE subprovider shall perform not less than 30% of the value of the contract work with assistance of employees employed and paid directly by the DBE; and equipment owned or rented directly by the DBE. DBE subproviders must perform a commercially useful function required in the contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. When a DBE is presumed not to be performing a commercially useful function, the DBE may present evidence to rebut this presumption.

A Provider must report a portion of the total value of the contract amount paid to a DBE joint venture equal to the distinct, clearly defined portion of the work of the contract performed by the DBE.

Proof of payment, such as copies of canceled checks, properly identifying the Department's contract number or project number may be required to substantiate the payment, as deemed necessary by the Department.

The Provider and any subprovider shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts. These requirements shall be physically included in any subcontract.

Failure to carry out the requirements set forth above shall constitute a material breach of this contract and, may result in termination of the contract by the Department or other such remedy as the Department deems appropriate.

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EXHIBIT H-1

Texas Department of Transportation
Subprovider Monitoring System
Commitment Worksheet

Contract #: 88-61DP5100 Assigned Goal: 11.7% Federally Funded X State Funded _____

Prime Provider: Huitt-Zollars, Inc. Total Contract Amount: $2,000,000

Prime Provider Info: DBE ___ HUB ___ Both ___

Vendor ID #: 17515001786 DBE/HUB Expiration Date: N/A
(First 11 Digits Only)

If no subproviders are used on this contract, please indicate by placing "N/A" on the 1st line under Subproviders.

Subprovider(s) (List All)	Type of Work	Vendor ID # (First 11 Digits Only)	D=DBE H=HUB	Expiration Date	$ Amount or % of Work *
AIA Engineers, Ltd.	3.2.1; 3.5.1; 4.2.1; 5.2.1; 5.3.1; 8.1.1; 8.2.1; 8.3.1; 10.1.1; 10.3.1; 10.5.1	17606188799	H	03/26/2017	8.75%
IEA, Inc.	3.1.1; 3.4.1; 4.1.1; 5.1.1; 8.1.1; 8.2.1; 8.3.1; 10.1.1; 10.2.1; 10.5.1	17110393661	D H	04/06/2016 10/24/2016	10.0%
Lockwood, Andrews & Newnam, Inc.	3.1.1; 3.2.1; 3.4.1; 3.5.1; 3.6.1; 4.1.1; 4.2.1; 5.1.1; 5.2.1; 5.3.1; 8.1.1; 8.2.1; 8.3.1; 10.1.1; 10.2.1; 10.3.1; 10.5.1;	17413815915	N/A	N/A	10.0%
P.E. Structural Consultants, Inc.	3.4.1; 3.5.1; 3.6.1; 5.1.1; 5.2.1; 5.3.1;	18105688628	D H	6/25/2017 8/22/2018	10.0%
Terracon Consultants, Inc.	14.1.1; 14.2.1; 14.3.1	14212499173	N/A	N/A	14.0%
Subprovider(s) Contract or % of Work* Totals					52.75%

*For Work Authorization Contracts, indicate the % of work to be performed by each subprovider.

Total DBE **or** HUB Commitment Dollars $_____

Total DBE **or** HUB Commitment Percentages of Contract 20 %
(Commitment Dollars and Percentages are for Subproviders only)

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EXHIBIT H-2

Texas Department of Transportation
Subprovider Monitoring System Commitment Agreement

This commitment agreement is subject to the award and receipt of a signed contract from the Texas Department of Transportation (TxDOT). ***NOTE: Exhibit H-2 is required to be attached to each contract that does not include work authorizations. Exhibit H-2 is required to be attached with each work authorization. Exhibit H-2 is also required to be attached to each supplemental work authorization. If DBE/HUB Subproviders are used, the form must be completed and signed. If no DBE/HUB Subproviders are used, indicate with "N/A" on this line: _____ and attach with the work authorization or supplemental work authorization.***

Contract #: _____ Assigned Goal: _____% Prime Provider:_____

Work Authorization (WA)#: _____ WA Amount: _____ Date: _____

Supplemental Work Authorization (SWA) #: _____ to WA #: _____ SWA Amount:_____

Revised WA Amount: _____

Description of Work *(List by category of work or task description. Attach additional pages, if necessary.)*	**Dollar Amount** *(For each category of work or task description shown.)*
Total Commitment Amount *(Including all additional pages.)*	$

IMPORTANT: The signatures of the prime and the DBE/HUB and Second Tier Subprovider, if any (both DBE and Non-DBE) and the total commitment amount must always be on the same page.

Provider Name: **Address:** **Phone # & Fax #:** **Email:**	**Name:** _____ *(Please Print)* **Title:**_____ _____ **Signature** **Date**
DBE/HUB Sub Provider **Subprovider Name:** **VID Number:** **Address:** **Phone # & Fax #:** **Email:**	**Name:** _____ *(Please Print)* **Title:**_____ _____ **Signature** **Date**
Second Tier Sub Provider **Subprovider Name:** **VID Number:** **Address:** **Phone #& Fax #:** **Email:**	**Name:** _____ *(Please Print)* **Title:**_____ _____ **Signature** **Date**

VID Number is the Vendor Identification Number issued by the Comptroller. If a firm does not have a VID Number, please enter the owner's Social Security or their Federal Employee Identification Number (if incorporated).

WAs Used

Contract No. 88-6IDP5100

601CT0000000000000000000004682

EXHIBIT H-3

Texas Department of Transportation Subprovider Monitoring System for Federally Funded Contracts
Progress Assessment Report for month of (Mo./Yr.) _____/_____

Contract #: _____ Original Contract Amount: _____

Date of Execution: _____ Approved Supplemental Agreements: _

Prime Provider: _____ Total Contract Amount: _____

Work Authorization No. _____ Work Authorization Amount: _____

If no subproviders are used on this contract, please indicate by placing "N/A" on the 1st line under Subproviders.

DBE	All Subproviders	Category of Work	Total Subprovider Amount	% Total Contract Amount	Amount Paid This Period	Amount Paid To Date	Subcontract Balance Remaining

Fill out Progress Assessment Report with each estimate/invoice submitted, *for all subcontracts*, and forward as follows:

1 Copy with Invoice - Contract Manager/Managing Office

1 Copy – TxDOT, BOP Office, 125 E. 11th, Austin, TX 78701, 512-486-5500, toll free 866-480-2518, or Fax to 512-486-5519

I hereby certify that the above is a true and correct statement of the amounts paid to the firms listed above.

Print Name - Company Official /DBE Liaison Officer	Signature	Phone	Date
Email		Fax	

12/06 DBE-H3.ATT

EXHIBIT H-4

Texas Department of Transportation
Subprovider Monitoring System
Final Report

The Final Report Form should be filled out by the Prime Provider and submitted to the Contract Manager and the Business Opportunity Programs Office for review upon completion of the contract. The report should reflect **all subcontract activity** on the project. The report will aid in expediting the final estimate for payment. If the HUB or DBE goal requirements were not met, documentation supporting good faith efforts must be submitted.

DBE Goal: _____% **OR** HUB Goal: %

Total Contract Amount: $_____ Total Contract Amount: $ _____

Contract Number:

Vendor ID #	Subprovider	Total $ Amt Paid to Date
	TOTAL	

This is to certify that _____% of the work was completed by the HUB or DBE subproviders as stated above.

_____
By: Prime Provider

_____
Per: Signature

Subscribed and sworn to before me, this _____ day of _____, 20 __

_____Notary Public _____ County

My Commission expires:_____

12/06 DBE-H4.A

EXHIBIT H-5

Federal Subprovider and Supplier Information

The Provider shall indicate below the name, address and phone number of all successful and unsuccessful subproviders and/or suppliers that provided proposals/quotes for this contract prior to execution. You may reproduce this form if additional space is needed.

Name	Address	Phone Number
AIA Engineers, Ltd.	15310 Park Row Houston, TX 77084	281-493-4140
IEA, Inc.	18333 Preston Rd, Ste 205 Dallas, TX 75252	214-884-4253
Lockwood, Andrews & Newnam, Inc.	8911 N. Capital of Texas Hwy, Bldg 2, Ste 2300 Austin, TX 78759	512-338-4212
P.E. Structural Consultants, Inc.	8436 Spicewood Springs Rd Austin,TX 78759	512-250-5200
Terracon Consultants, Inc.	8901 Carpenter Fwy, Ste 100 Dallas, TX 75247	214-630-1010

The information must be provided and returned with the contract.

William E Kallas — Signature

9-24-15 — Date

William E. Kallas, PE — Printed Name

wkallas@Huitt-Zollars.com — Email

(214) 871-3311 — Phone #

WAs Used

Contract No. 88-6IDP5100
601CT00000000000000000000004682

HUB Subcontracting Plan (HSP)
Prime Contractor Progress Assessment Report

This form must be completed and submitted to the contracting agency each month to document compliance with your HSP.

Contract/Requisition Number: ____________ Date of Award: ____________ (mm/dd/yyyy) Object Code: ________ (Agency Use Only)

Contracting Agency/University Name: ______________________________

Contractor (Company) Name: ______________________ State of Texas VID #: ____________

Point of Contact: ______________________ Phone #: ____________

Reporting (Month) Period: ____________ Total Amount Paid this Reporting Period to Contractor: $ -

Report HUB and Non-HUB subcontractor information

Subcontractor's Name	Subcontractor's VID or HUB Certificate Number	*Texas Certified HUB? (Yes or No)	Total Contract $ Amount from HSP with Subcontractor	Total $ Amount Paid This Reporting Period to Subcontractor	Total Contract $ Amount Paid to Date to Subcontractor	Object Code (Agency Use Only)
			$ -	$ -	$ -	
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Signature: ______________________ Title: ______________ Date: ____________

*Note: Prime contractors can verify subcontractor HUB certification status on-line at http://www2.tbpc.state.tx.us/cmbl/cmblhub.html

HSP-PAR Rev. 9/05